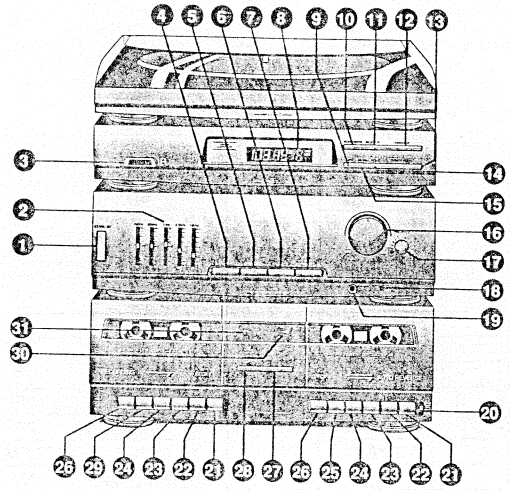
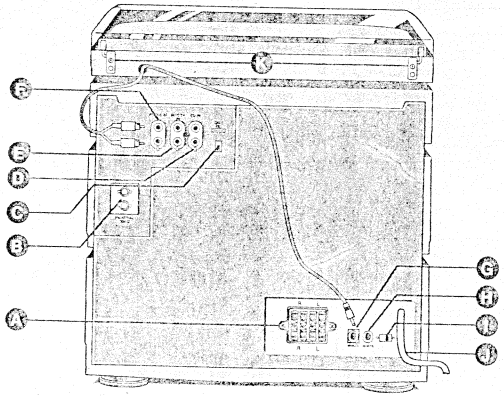
PHILIPS

AS9510

MODEL

SERVICE MANUAL





1	Power Switch	1259	21	Pause	
2	Graphic Equalizer	3505,3507	22	F.Forward	
		3509,3511	23	F.Rewind	
		3513	24	Play	
3	Infra Red Sensor	6420	25	Direction II	
4	Tuner	1404	26	Stop-Eject	
5	Tape	1402	27	Fe/Cr	1801
6	Phono/TV	1401	28	Dolby NR	1802
7	CD	1403	29	Record I	
8	Display	1400	30	Reverse Direction Indicator	6801
9	Band Selector	1406	31	Dolby NR Indicator	6802
10	Preset Down	1412	A	Speaker Connection	1254
11	Preset Up	1411	B	FM Aerial Socket	1100
12	Tuning Up	1410	*	FM Aerial Socket	1104
13	Tuning Down	1407	C #	Grid Selector	1105
14	Mono/Stereo	1408	D	CD Input	1554
15	Program Memo	1409	E	Aux/TV	1554
16	Volume Control	3500	F	Not Applicable	
17	Balance	3545	G	Not Applicable	
18	DBB Switch	1405	H	Remote Out Socket	1255
19	Headphone	1256	I #	Voltage Selector	1262
20	Auto Reverse Mode		J	AC Mains Cord	

* For TS5901/17 only
\# For -/01/21 only

ADJUSTMENT	CASSETTE	SK...	Recorder position DECK I	Recorder position DECK II	MEASURE ON	READ ON	ADJUST WITH	ADJUST TO
Azimuth	10KHz SBC 420*	Tape	Play	-	1256	mV-meter	Left hand Screw Play head	Max. L = R
		Tape	-	Play fwd	1256	mV-meter	Left hand Screw R/P Head	
		Tape	-	Play rev	1256	mV-meter	Right hand Screw R/P Head	
Motor speed (Normal)	3150Hz SBC420*	Tape	Play	-	1256	Wow and Flutter meter	3774	** a
		Tape	-	Play	1256	Wow and Flutter meter	3776	

* SBC 420 : 4822 397 30071
** a The maximum permissible speed deviation is 2%.
Moreover, the wow and flutter value can be read.
This value should not exceed 0.35%.

SPECIFICATIONS

GENERAL

Mains voltage	: 120V - 220V - 240V 115V - 230V for -/21 only
Mains selection/setting	: Serviceable Set at 120V for -/17 only Set at 220V except /17/30/45 Set at 240V for -/30/45 only : Switchable Set at 220V for -/21 only
Mains frequency	: 50Hz - 60Hz
Power consumption	: 120W max.
Dimension centre unit	: 360 x 382 x 380 mm

TUNER : FM SECTION

Tuning range	: 87.5MHz - 108MHz
IF frequency	: 10.7MHz
Aerial input	: 75Ω coaxial 300Ω screw type for -/17 only
Sensitivity at 26dB S/N	: <5µV <10µV for -/17 only
Selectivity at 600kHz bandwidth	: >30dB
IF rejection	: >60dB
Image rejection	: >25dB

TUNER : AM SECTION

Tuning range	MW : 522kHz - 1611kHz MW : 530kHz - 1700kHz for -/17 only LW : 148kHz - 284kHz for 3 band verions only
IF frequency	: 450kHz
Grid selector	: 9kHz - 10kHz for -/21 only
Sensitivity at 26dB S/N	MW : <3.0mV/M LW : <4.0mV/M
Selectivity at 18kHz bandwidth	: >20dB
IF rejection	: >26dB
Image rejection	MW : >28dB LW : >30dB

AMPLIFIER

Output power at 10% distortion	: 2 x 15W -1dB
Speaker impedance	: 2 x 8Ω
Frequency response within -3dB	: 60Hz - 14kHz
Equalizer control	: -7dB to +7dB
Dynamic bass boost	: +8dB at 100Hz
Headphone output at 8Ω	: 350mV
Remote control output	: 5V non-inverted RC5
Input sensitivity	Aux/TV : 200mV at 47kΩ CD : 400mV at 47kΩ

CASSETTE RECORDER

Number of track	: 2 x 2 stereo
Tape speed	: 4.76 cm/sec ± 2% 1.8 x 4.76 cm/sec
Wow and flutter	: <0.4%
Fast-wind time C60	: 130 sec
Bias system	: 74kHz ± 6kHz
Recording playback frequency response within -7dB	: 125Hz - 12.5kHz
Noise Reduction Factor	: 8.5dB

RECORD PLAYER

Type of drive system	: Belt drive
Type of PU Head	: Sapphire
Stylus force	: 5.0gmf +1.5gmf/-1gmf
Speed	: 33 1/3 ; 45 rpm ± 2%
Wow and flutter	: <0.3%
Rumble	: -30dB DIN A : -50dB DIN B

SELF-TEST PROCEDURE

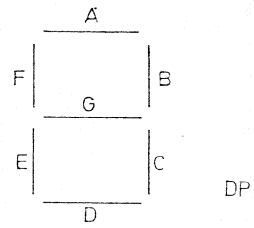
When holding the program-key and preset- up key down during power up the EEROM is loaded after which the display lights completey until both keys are released.

The loaded information are as follows:

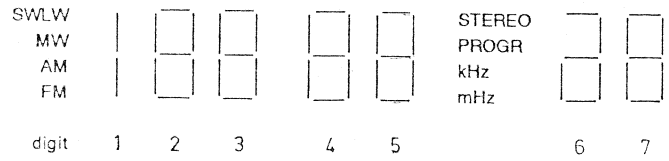
Preset	Frequency			Band
		POL	USA	
0	87.50	65.00	87.5	
1	97.00	65.00	106.5	
2	98.00	65.00	87.5	FM
3	99.00	65.00	87.5	
4	108.00	65.00	87.5	
			USA	
5	522		530	
6	567		580	
7	603		620	MW
8	1278		1370	
9	1494		1610	
10	1611			
11	148			
12	155			
13	200			LW
14	275			
15	284			
		EUR		
16	3820	5820		
17	3900	5900		SW
18	11900	13900		
19	12100	14100		

LCD Display / uProcessor interconnection

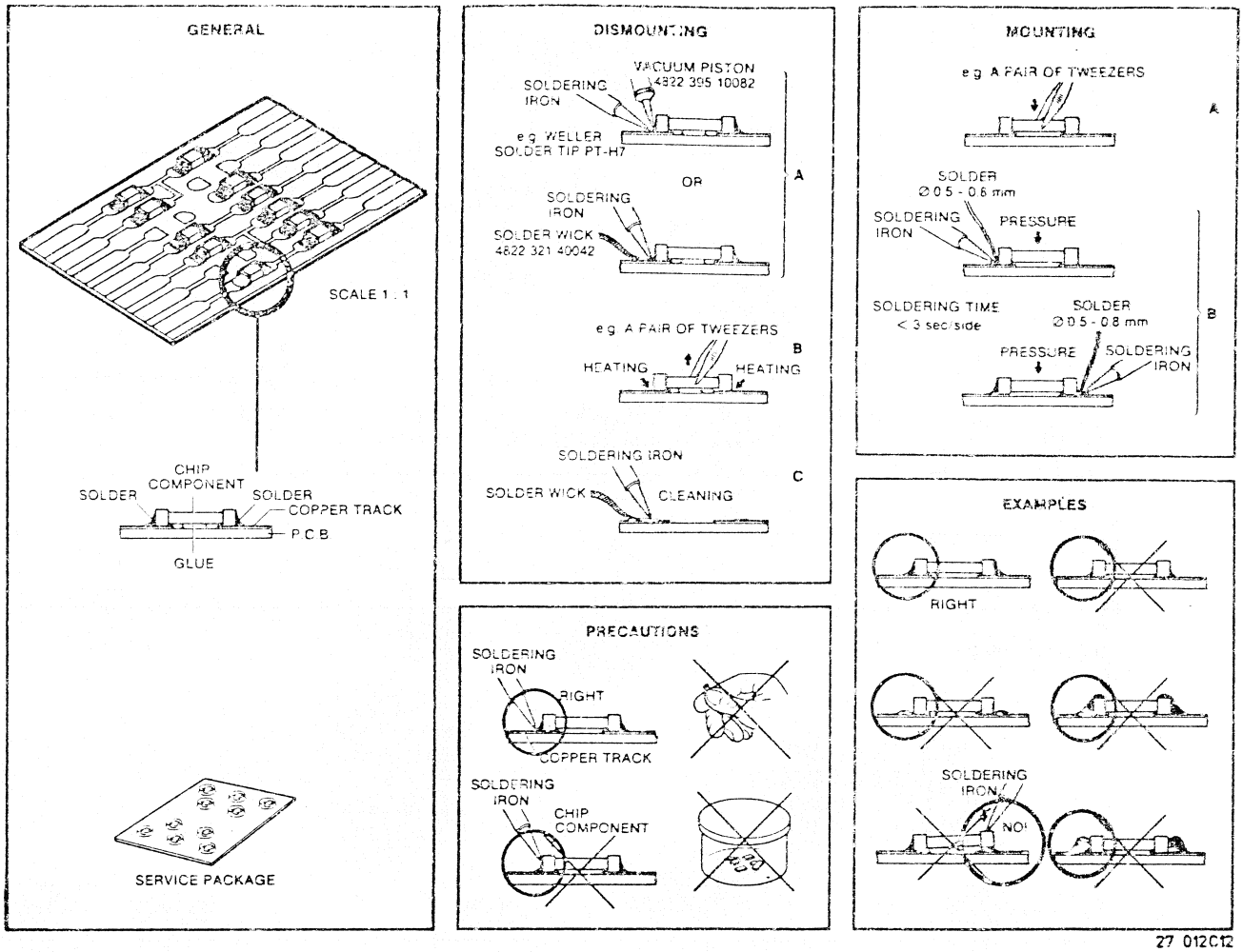
COM2	COM1	LCD Pin	uProc Pin
7C	7D	26	43
7G	7E	25	44
7B	7F	24	45
6B	7A	23	46
5C	5D	22	47
5G	5E	21	48
5B	5F	20	49
KHZ	5A	19	50
4C	4D	18	51
4G	4E	17	52
4B	4F	16	53
LW	4A	15	54
3C	3D	14	55
3G	3E	13	56
3B	3F	12	57
SW	3A	11	59
2C	2D	10	60
2G	2E	9	61
2B	2F	8	62
1BC	2A	7	63
MW	MHZ,FM,DP	6	64
PROGR	AM	5	1
STEREO	6ADG	4	2
6E	6C	3	3
COM2	-	2	5
-	COM1	1	4



LCD Display



HANDLING CHIP COMPONENTS



27 012C12

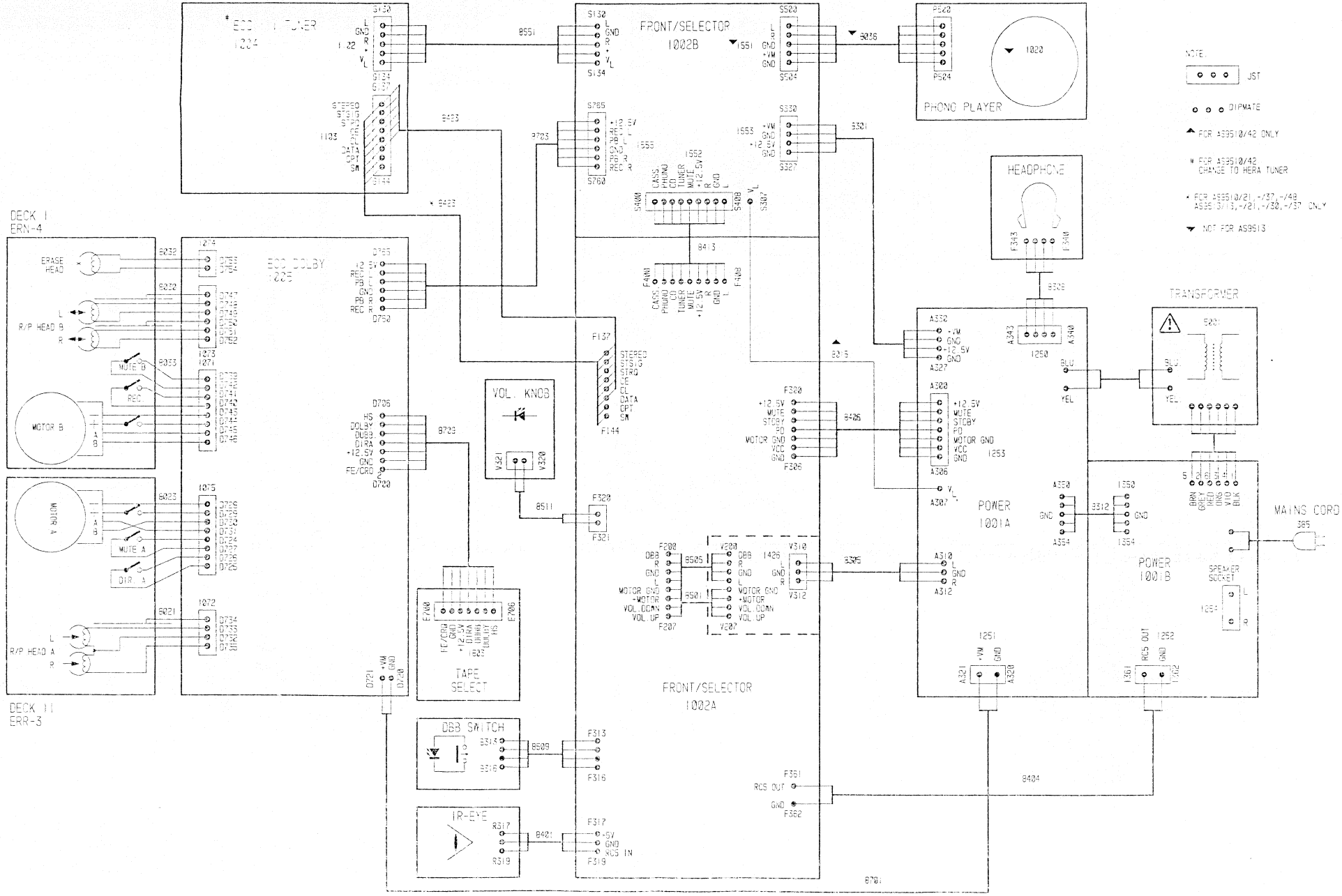
Carbon film 0.2 W CR16	70°C	5%	
Carbon film 0.33 W CR25	70°C	5%	
Carbon film 0.5 W CR37	70°C	5%	
Standard film 0.5 W SFR16T	70°C	5%	
Standard film 0.4 W SFR25	70°C	5%	
Metal film 0.6 W MRS25	70°C	5%	
Safety resistor			

(C) Chip component

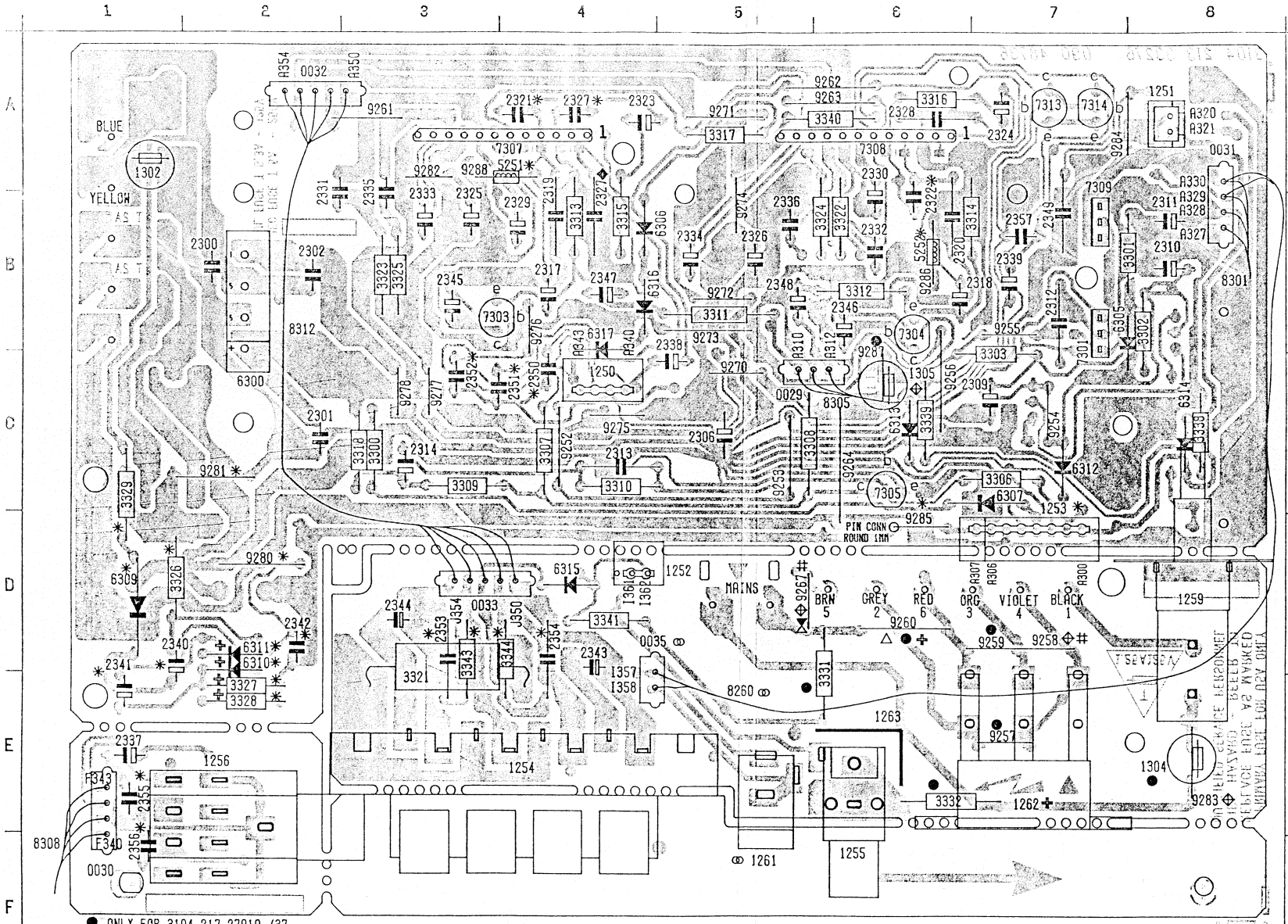
Plate ceramic Tuning < 120 pF	2%
Plate ceramic Others	−20/+80%
Tubular ceramic	
Polystyrene film / foil	1%
Polyestor Film / foil	10%
Mylar	10%
Electrolytic	

a	2,5 V
b	4 V
c	6,3 V
d	10 V
e	16 V
f	25 V
g	40 V
h	63 V
j	100 V
l	125 V
m	150 V
n	160 V
q	200 V
r	250 V
s	300 V
t	350 V
u	400 V
v	500 V
w	630 V
x	1000 V
A	1,6 V
B	6 V
C	12 V
D	15 V
E	20 V
F	35 V
G	50 V
H	75 V
I	80 V

26338


FRONT/SELECTOR
1002B
PHONO PLAYER
1020
HEADPHONE
TRANSFORMER
MAINS CORD
POWER
1001A
POWER
1001B
FRONT/SELECTOR
1002A
DECK I
ERR-4
DECK II
ERR-3
VOL. KNOB
TAPE
SELECT
DBB SWITCH
IR-EYE
SPEAKER
SOCKET
NOTE:
JST
DIPMATE
FOR AS9510/42 ONLY
FOR AS9510/42
CHANGE TO HERA TUNER
FOR AS9510/21,-/37,-/48
AS9513/13,-/21,-/30,-/37 ONLY
NOT FOR AS9513

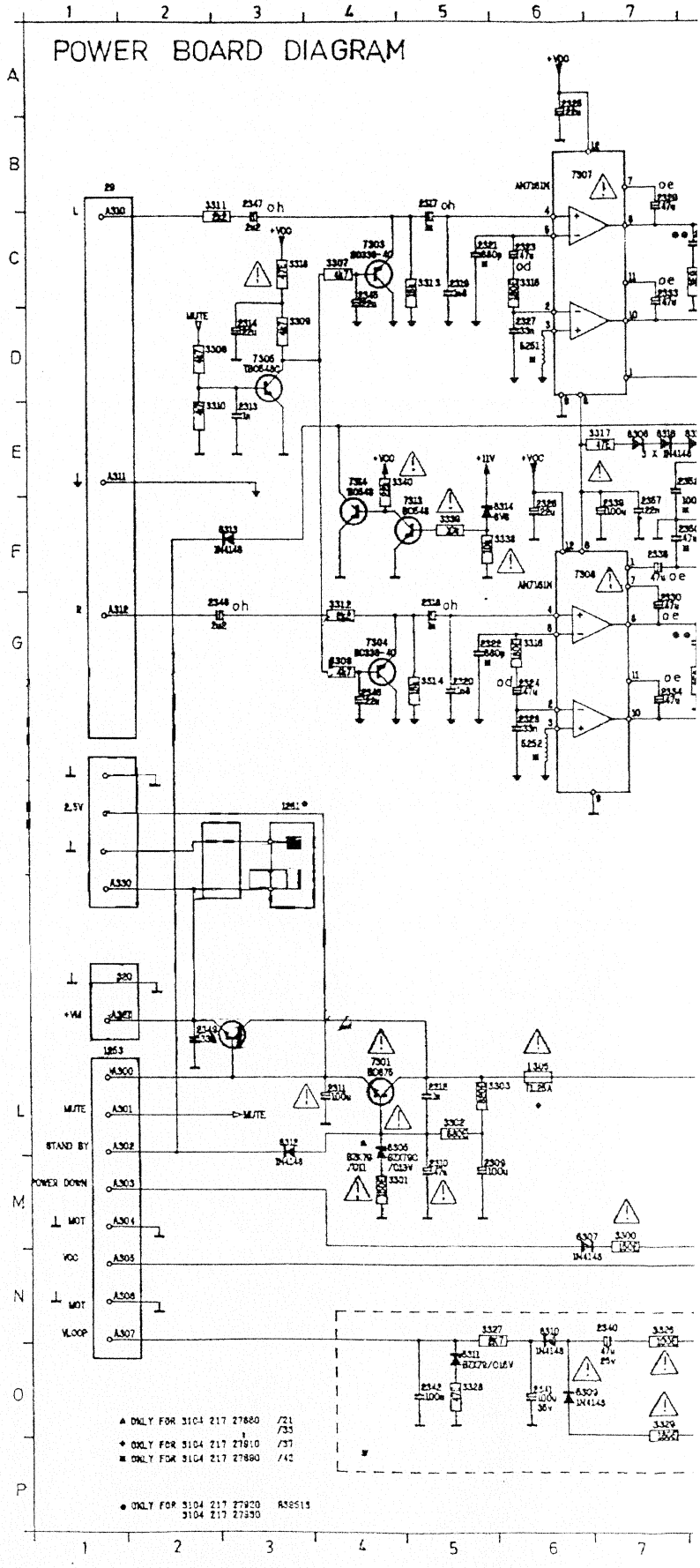
POWER BOARD

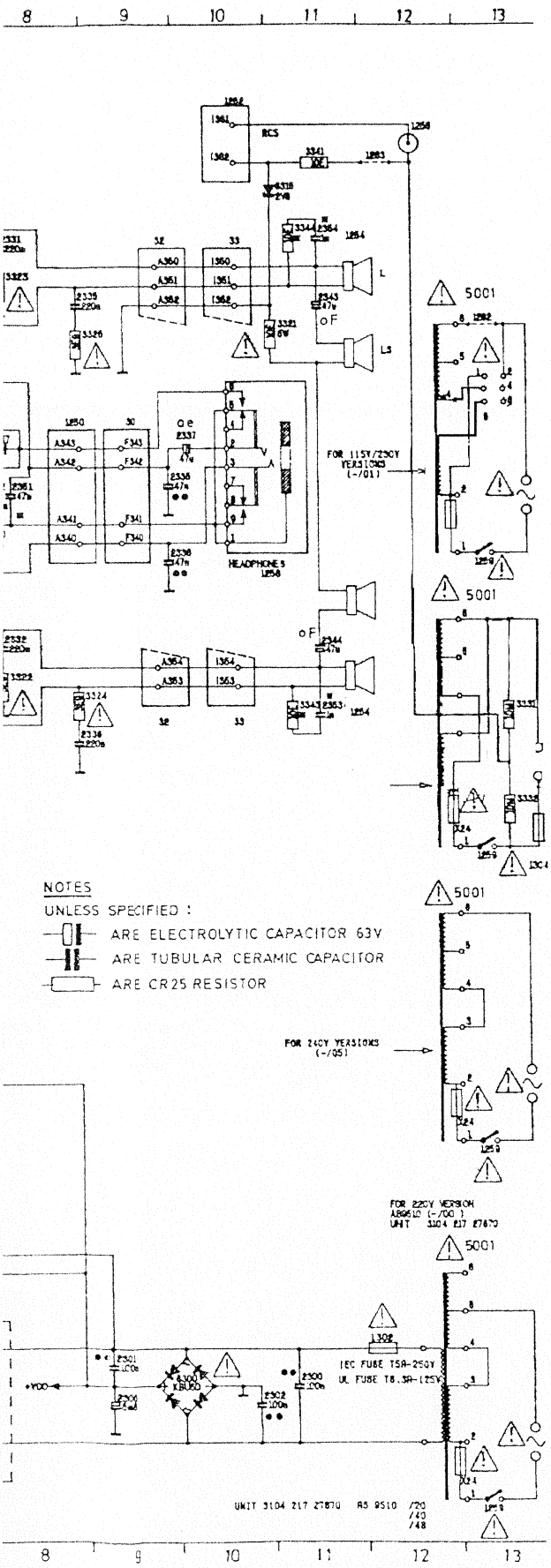


● ONLY FOR 3104-217-27910 /37
⊕ NOT FOR 3104-217-27910 /37
△ ONLY FOR 3104-217-27900 /45
⧗ NOT FOR 3104-217-27900 /45
✳ ONLY FOR 3104-217-27890 /42
✣ ONLY FOR 3104-217-27880 /21 /33
NOT FOR 3104-217-27880 /21 /33
◆ NOT FOR 3104-217-27890 /42
⊛ ONLY FOR 3104-217-27920 AND 27930 AS9513

0029	C 5	2350	C 4	7313	A 7
0030	F 1	2351	C 4	7314	A 7
0031	A 8	2352	C 3	9252	C 4
0032	A 2	2353	D 3	9253	C 5
0033	D 3	2354	D 4	9254	C 7
A 0035	D 4	2355	E 1	9255	B 7
1250	C 4	2356	F 1	9256	C 6
1251	A 8	2357	B 7	9257	E 7
1252	D 5	3300	C 3	9258	D 7
1253	C 7	3301	B 8	9259	D 7
1254	E 4	3302	B 8	9260	D 6
1255	F 6	3303	C 7	9261	A 3
1256	E 2	3306	C 7	9262	A 6
1259	D 8	3307	C 4	9263	A 6
1261	F 5	3308	C 6	9264	C 6
1262	E 7	3309	C 3	9267	D 5
1263	E 6	3310	C 4	9270	C 5
1302	A 1	3311	B 5	9271	A 5
1304	E 8	3312	B 6	9272	B 5
1305	C 6	3313	B 4	9273	B 5
2300	B 2	3314	B 7	9274	B 5
2301	C 2	3315	B 4	9275	C 4
2302	B 2	3316	A 6	9276	B 4
2306	C 5	3317	A 5	9277	C 3
2309	C 7	3318	C 3	9278	C 3
2310	B 8	3321	E 3	9280	D 2
2311	B 8	3322	B 6	9281	C 2
C 2312	B 7	3323	B 3	9282	A 3
2313	C 4	3324	B 6	9283	E 8
2314	C 3	3325	B 3	9284	A 7
2317	B 4	3326	D 1	9285	D 6
2318	B 7	3327	E 2	9286	B 6
2319	A 4	3328	E 2	9287	C 6
2320	B 6	3329	C 1	9288	A 3
2321	A 4	3331	D 6		
2322	B 6	3332	E 6		
2323	A 4	3338	C 8		
D 2324	A 7	3339	C 6		
2325	B 3	3340	A 6		
2326	B 5	3341	D 4		
2327	A 4	3343	D 3		
2327	B 4	3344	D 4		
2328	A 6	5251	A 4		
2329	B 4	5252	B 6		
2330	A 6	6300	C 2		
2331	A 2	6305	B 7		
2332	B 6	6306	B 5		
2333	B 3	6307	C 7		
E 2334	B 5	6309	D 1		
2335	A 3	6310	D 2		
2336	B 5	6311	D 2		
2337	E 1	6312	C 7		
2338	B 5	6313	C 6		
2339	B 7	6314	C 8		
2340	D 1	6315	D 4		
2341	D 1	6316	B 4		
2342	D 2	6317	B 4		
2343	D 4	7301	B 7		
2344	D 3	7303	B 3		
F 2345	B 3	7304	B 6		
2346	B 6	7305	C 6		
2347	B 4	7307	A 4		
2348	B 5	7308	A 6		
2349	B 7	7309	A 7		

0030	E9	2352	E7
0031	M1	2353	H11
0032	C9	2354	C11
0032	M9	2357	F7
0033	C10	3300	M7
0033	H10	3301	M46
1250	E8	3302	L5
1251	J1	3303	L5
1252	A10	3306	D2
1253	K1	3307	C4
1254	M11	3308	G4
1254	C11	3309	D3
1255	B12	3310	E2
1256	F11	3311	B3
1261	I3	3312	G4
1262	D13	3313	C5
1263	B12	3314	G5
1302	M12	3315	C6
1304	I13	3316	G6
1305	L6	3317	E7
2300	O11	3318	C3
2301	O9	3321	D11
2302	O10	3322	G8
2306	O9	3323	C8
2309	M5	3324	M8
2310	M5	3325	D8
2311	L4	3326	M7
2312	L5	3327	M5
2313	E3	3328	O5
2314	D3	3329	O7
2317	B5	3331	H13
2318	G5	3332	I13
2319	C5	3338	F5
2320	G5	3339	F5
2321	C5	3340	E4
2322	G5	3341	B11
2323	C6	3343	H11
2324	G6	3344	C11
2325	A6	5001	J12
2326	F6	5001	G12
2327	D6	5001	D12
2328	H6	5001	M12
2329	B7	5251	D6
2330	G7	5252	H6
2331	C8	6300	O10
2332	G8	6305	[redacted]
2333	C7	6306	[redacted]
2334	H7	6307	M6
2335	E9	6309	O6
2335	C8	6310	M6
2336	H8	6311	[redacted]
2336	F9	6312	L3
2337	E10	6313	F3
2338	F7	6314	F5
2339	F7	6315	B11
2340	M7	6316	E7
2341	O6	6317	E8
2342	O5	7301	K4
2343	C11	7303	C4
2344	G11	7304	G4
2345	C4	7305	D3
2346	H4	7307	B5
2347	B3	7308	F6
2348	G3	7309	K3
2349	K2	7313	F5
2350	F7	7314	E4
2351	E8		





FOR POWER BOARD

+Vcc : 22.4V

7307/7308

: 4.0V
: 1.2V
: 0V
: 0.1V
: 1.2V
: 22.4V
: 21.5V
: 12.2V
: 0V
: 12.2V
: 22.0V
: 22.4V

	7303/7304	7309
13.1V	e : 0V	e : 12.7V
14.6V	b : 0V	b : 13.1V
22.4V	c : 0V	c : 22.4V

7313	7314
e : 0V	e : 21.4V
b : 0.7V	b : 0V
c : 0V	c : 0V

....V measured in power on position

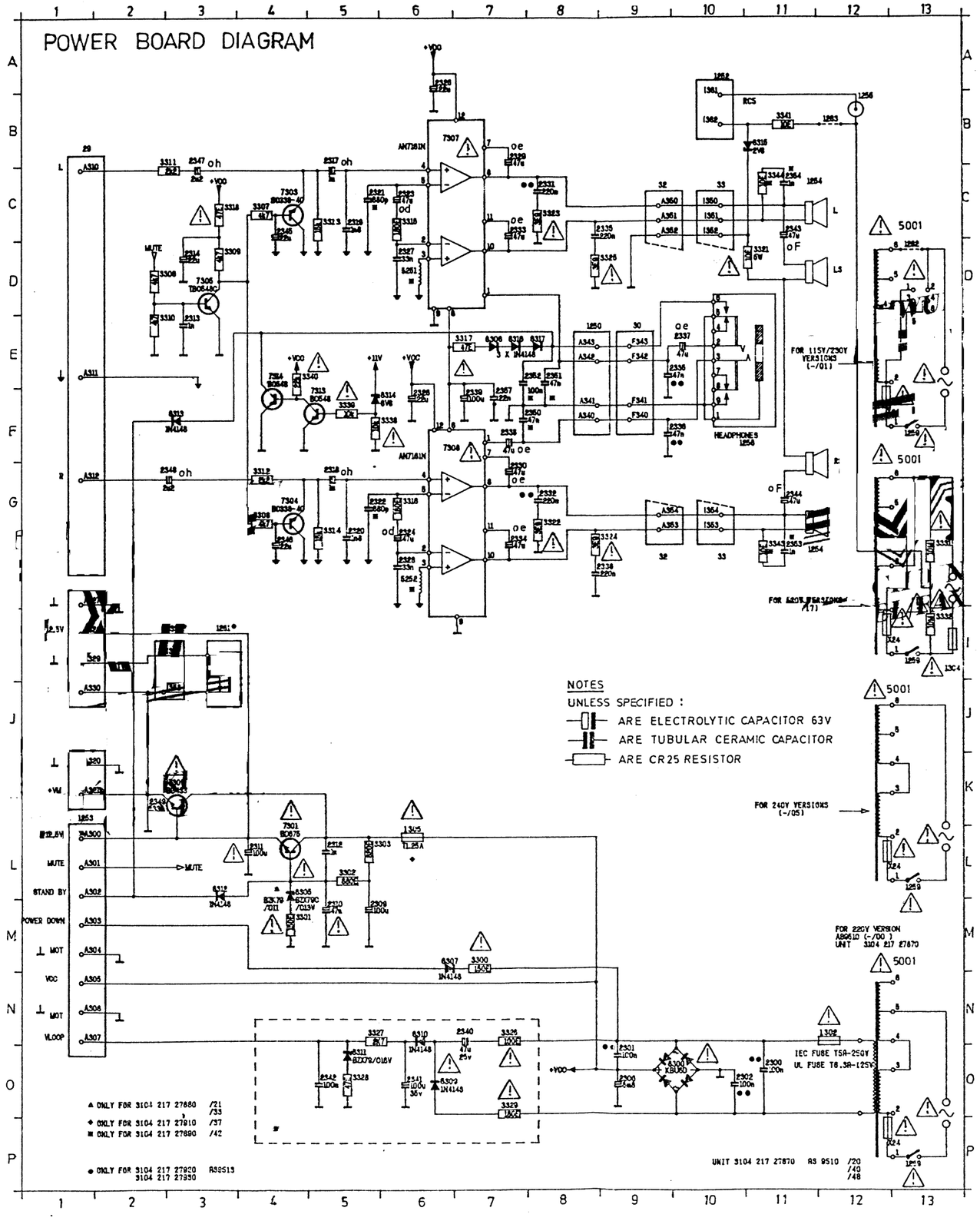
FOR TAPE SELECT BOARD

7801

e : 12.5V
b : 12.5Vfw
11.7Vrew
c : 0Vfw
12.5Vrw

....V measured in power on position
....Vfw measured in tape forward position
....Vrew measured in tape rewind position

0030	E9	2352	E7
0031	M1	2353	H11
0032	C9	2354	C11
0032	M9	2357	F7
0033	C10	3300	M7
0033	H10	3301	M46
1250	E8	3302	L5
1251	J1	3303	L5
1252	A10	3306	D2
1253	K1	3307	C4
1254	M11	3308	G4
1254	C11	3309	D3
1255	B12	3310	E2
1256	F11	3311	B3
1261	I3	3312	G4
1262	D13	3313	C5
1263	B12	3314	G5
1302	M12	3315	C6
1304	I13	3316	G6
1305	L6	3317	E7
2300	O11	3318	C3
2301	O9	3321	D11
2302	O10	3322	G8
2306	O9	3323	C8
2309	M5	3324	M8
2310	M5	3325	D8
2311	L4	3326	M7
2312	L5	3327	M5
2313	E3	3328	O5
2314	D3	3329	O7
2317	B5	3331	H13
2318	G5	3332	I13
2319	C5	3338	F5
2320	G5	3339	P5
2321	C5	3340	E4
2322	G5	3341	B11
2323	C6	3343	H11
2324	G6	3344	C11
2325	A6	5001	J12
2326	F6	5001	G12
2327	D6	5001	D12
2328	H6	5001	M12
2329	B7	5251	D6
2330	G7	5252	H6
2331	C8	6300	Q10
2332	G8	6305	[illegible]
2333	C7	6306	[illegible]
2334	H7	6307	M6
2335	E9	6309	O6
2335	C8	6310	M6
2336	H8	631	[illegible]
2336	F9	631z	L3
2337	E10	6313	F3
2338	F7	6314	F5
2339	F7	6315	B11
2340	M7	6316	E7
2341	O6	6317	E8
2342	O5	7301	K4
2343	C11	7303	C4
2344	G11	7304	G4
2345	C4	7305	D3
2346	H4	7307	B6
2347	B3	7308	F6
2348	G3	7309	K3
2349	K2	7313	F5
2350	F7	7314	E4
2351	E8		



11

FOR POWER BOARD

+Vcc : 22.4V

7307/7308

1 : 4.0V
2 : 1.2V
3 : 0V
4 : 0.1V
5 : 1.2V
6 : 22.4V
7 : 21.5V
8 : 12.2V
9 : 0V
10 : 12.2V
11 : 22.0V
12 : 22.4V

7301	7303/7304	7309
e : 13.1V	e : 0V	e : 12.7V
b : 14.6V	b : 0V	b : 13.1V
c : 22.4V	c : 0V	c : 22.4V

7313	7314
e : 0V	e : 21.4V
b : 0.7V	b : 0V
c : 0V	c : 0V

....V measured in power on position

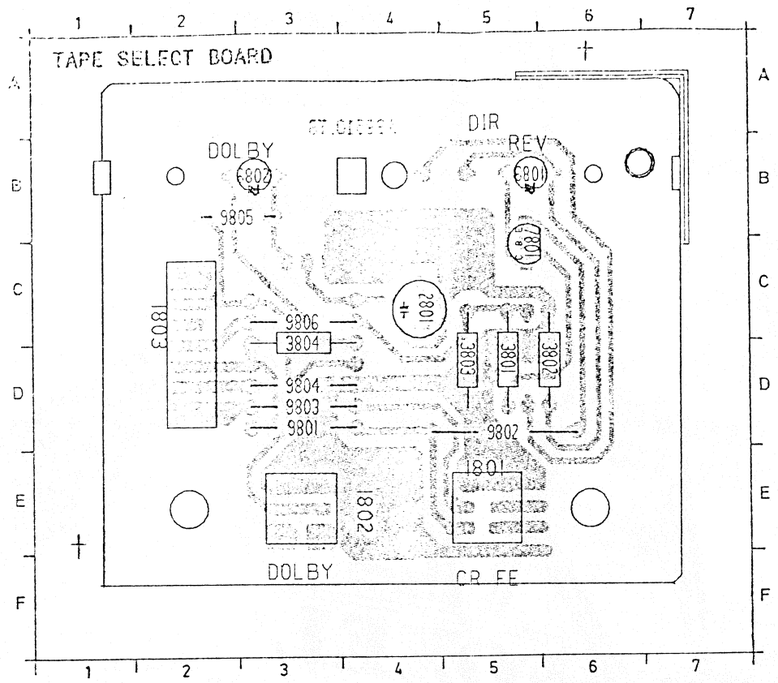
FOR TAPE SELECT BOARD

7801

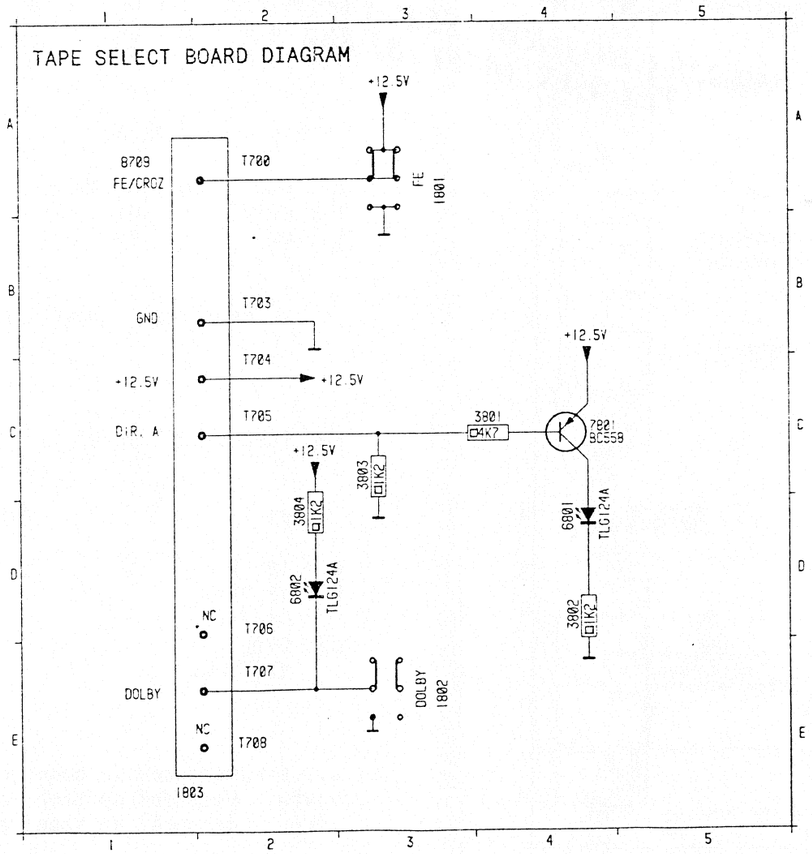
e : 12.5V
b : 12.5Vfw
11.7Vrew
c : 0Vfw
12.5Vrw

....V measured in power on position
....Vfw measured in tape forward position
....Vrew measured in tape rewind position

12

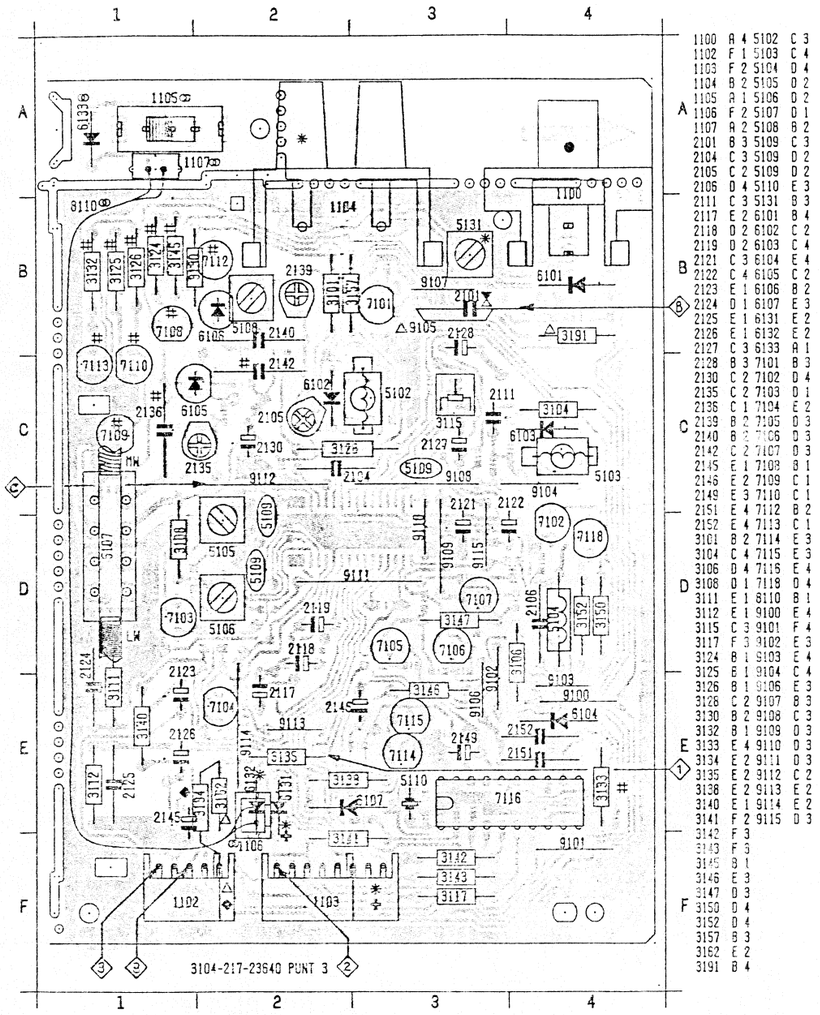


	80	A1
A	1801	E5
	1802	E4
	1803	C2
	3801	D5
	3802	C6
	3803	D5
B	3804	C3
	6801	B5
	6802	B3
	7801	C5
	9801	D3
	9802	D5
C	9803	D3
	9804	D3
	9805	B2
	9806	C3



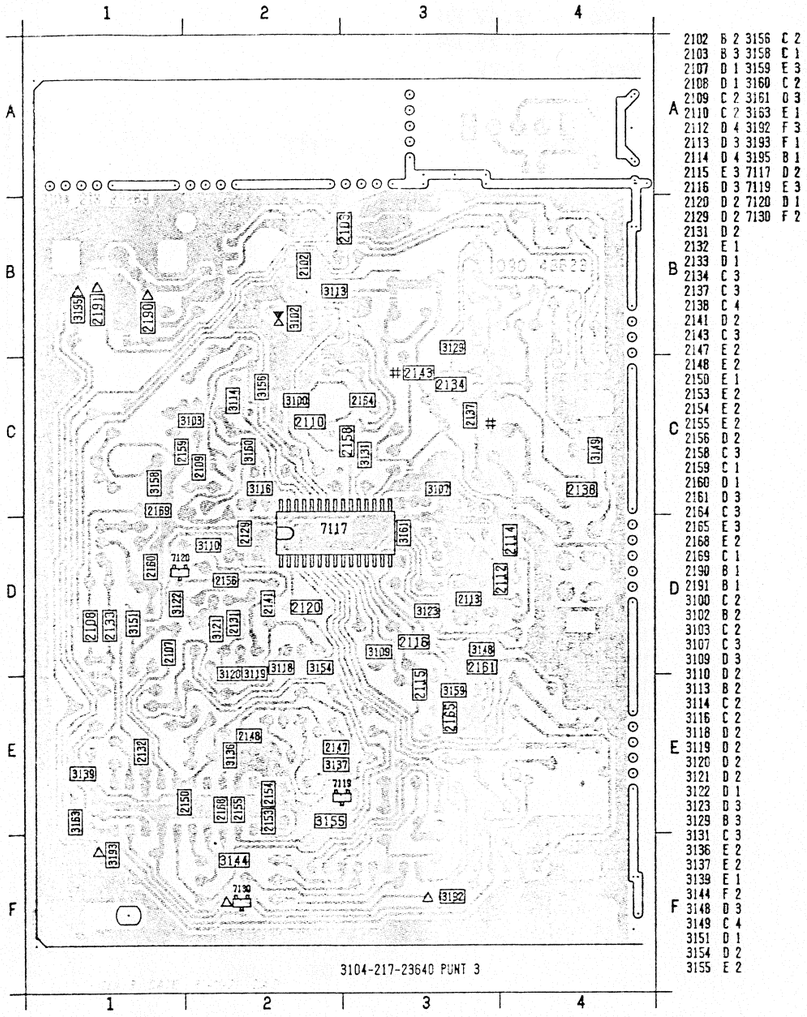
1801	A	3
1802	E	3
1803	E	4
3801	D	4
3802	D	4
3803	C	5
3804	D	2
6801	D	4
6802	D	2
7801	D	4
8709	A	1

TUNER BOARD



1100	A	4	5102	C	3
1102	F	1	5103	C	4
1103	F	2	5104	D	4
1104	B	2	5105	D	2
1105	A	1	5106	D	2
1106	F	2	5107	D	1
1107	A	2	5108	B	2
2101	B	3	5109	C	3
2104	C	3	5109	D	2
2105	C	2	5109	D	2
2106	D	4	5110	E	3
2111	C	3	5131	B	3
2117	E	2	6101	B	4
2118	D	2	6102	C	2
2119	D	2	6103	C	4
2121	C	3	6104	E	4
2122	C	4	6105	C	2
2123	E	1	6106	B	2
2124	D	1	6107	E	3
2125	E	1	6131	E	2
2126	E	1	6132	E	2
2127	C	3	6133	A	1
2128	B	3	7101	B	3
2130	C	2	7102	D	4
2135	C	2	7103	D	1
2136	C	1	7104	E	2
2139	B	2	7105	D	3
2140	B	2	7106	D	3
2142	C	2	7107	D	3
2145	E	1	7108	B	1
2146	E	2	7109	C	1
2149	E	3	7110	C	1
2151	E	4	7112	B	2
2152	E	4	7113	C	1
3101	B	2	7114	E	3
3104	C	4	7115	E	3
3106	D	4	7116	E	4
3108	D	1	7118	D	4
3111	E	1	8110	B	1
3112	E	1	9100	E	4
3115	C	3	9101	F	4
3117	F	3	9102	E	3
3124	B	1	9103	E	4
3125	B	1	9104	C	4
3126	B	1	9106	E	3
3128	C	2	9107	B	3
3130	B	2	9108	C	3
3132	B	1	9109	D	3
3133	E	4	9110	D	3
3134	E	2	9111	D	3
3135	E	2	9112	C	2
3138	E	2	9113	E	2
3140	E	1	9114	E	2
3141	F	2	9115	D	3
3142	F	3			
3143	F	3			
3145	B	1			
3146	E	3			
3147	D	3			
3150	D	4			
3152	D	4			
3157	B	3			
3162	E	2			
3191	B	4			

△: ONLY FOR AUTOSTORE SETS (AS9600)
⧖: NOT FOR AUTOSTORE SETS
✳: ONLY FOR /17 UNITS
●: NOT FOR /17
#: NOT FOR /01 /10 AND /17 UNITS
✣: ONLY FOR /10 UNITS
◈: FOR EXTERNAL LOOPSUPPLY (AS9400)
(AS9500)
⊛: ONLY FOR /01 UNITS



△: ONLY FOR AUTOSTORE SETS (AS9600)
⧖: NOT FOR AUTOSTORE SETS
*: ONLY FOR /17 UNITS
#: NOT FOR /10 AND /17 UNITS
+: ONLY FOR /10 UNITS

SK...	FREQUENCY	I/P	DISPLAY	ADJUST	O/P	SCOPE/METER
Varicap alignment						
FM 87.5-108MHz			108MHz 87.5MHz	5103 check	1	8V 2.9V ± 0.3V
LW 148-284kHz			284kHz	5108		8.0V
MW 522-1611kHz (530-1700kHz)			1611kHz (1700kHz)	2139		1.0V # 8.5V + (8.0V)
			522kHz (530kHz)	5108		1.2V # (1.0V)
FM-RF						
FM	87.5MHz mod = 1kHz △f = 22.5kHz	B	87.5MHz	5102	3	max.
	108MHz mod = 1kHz △f = 22.5kHz		108MHz	2105		
Stereo decoder						
FM	98MHz carrier 1mV	B	98MHz	3115	2	76 ± 0.2kHz
AM-IF						
MW	450kHz $ △f = 10kHz 50Hz	C	522kHz (530kHz)	5106 5105	3	Symmetrical max. to
AM-RF						
LW *	200kHz	A	200kHz	5107	3	max.
MW *	558kHz (560kHz)		558kHz (560kHz)	5107		
	1494kHz (1600kHz)		1494kHz (1600kHz)	2135		

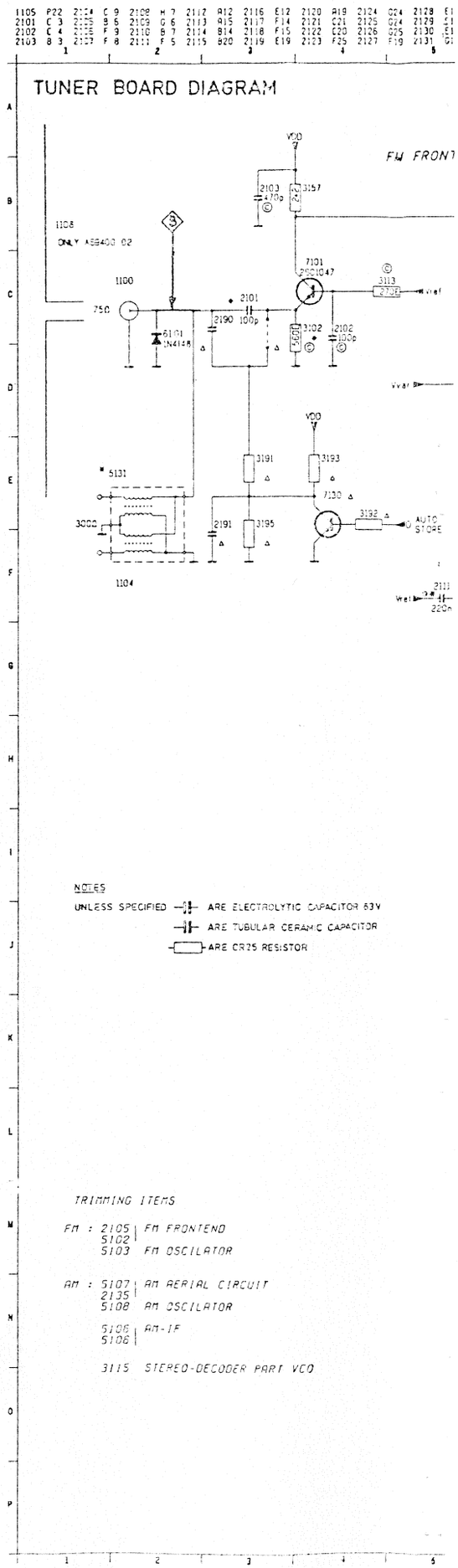
* Mod 1kHz 30% AM
$ via 100nF
(..) Grid 10kHz for -/01/21 only
+ For LW version only
# Not for LW version

Repeat

+Vdd : 11.9V
+Vc : 7.4V FM
8.1V AM
Vref : 1.2V

	7116		7117	
	FM	AM	FM	AM
1 :	1.7V	1.7V	0V	1.0V
2 :	-	-	1.4V	1.5V
3 :	-	-	0.2V	1.0V
4 :	-	-	3.2V	3.2V
5 :	-	-	2.4V	2.4V
6 :	0.2V	4.9V	2.4V	2.4V
7 :	0V	0V	7.4V	8.1V
8 :	0.2V	0.2V	3.8V	3.8V
9 :	1.3V	0V	1.4V	1.3V
10 :	0.7V	0.7V	1.0V	1.2V
11 :	0.1V	0.1V	0V	0V
12 :	0.1V	0.1V	0.1V	0.2V
13 :	0.1V	1.8V	1.3V	0V
14 :	2.8V	0.1V	0V	0V
15 :	5.6V	5.7V	1.3V	0V
16 :	5.6V	5.7V	0.2V	0V
17 :	-	-	0V	0V
18 :	1.0V	1.0V	0.3V	0V
19 :	0V	0V	1.2V	1.2V
20 :	0.9V	0.9V	1.2V	1.2V
			1.2V	1.2V
			1.2V	1.2V
			1.2V	1.2V
			1.2V	1.2V
			0.2V	0V
			3.2V	3.8V
			1.4V	1.4V
			1.6V	1.6V
			1.0V	1.0V
			0V	0V

....V measured in tuner on postion



D DIAGRAM

FM FRONTEND

FM OSCILLATOR

AM-IF

AM-IF

AM-IF

AM OSCILATOR

LOOPFILTER

Ferroceptor

FM=high level

TUNED=high level

LW=low level

AM=low level

STEREO=low level

ARE ELECTROLYTIC CAPACITOR 63V
ARE TUBULAR CERAMIC CAPACITOR
ARE CR25 RESISTOR

'S
FRONTEND
OSCILATOR
PERIAL CIRCUIT
OSCILATOR
IF
PEO-DECODER PART VCO

NOT FOR /10 AND /17 /51 UNITS
• NOT FOR AUTOSTORE SETS
x ONLY FOR /17 UNITS
Δ ONLY FOR AUTOSTORE SETS
+ ONLY FOR /10 UNITS
• ONLY FOR /01 UNITS

AS9400
AS9500
AS9600
AS9604
AH807
AH808
AH809

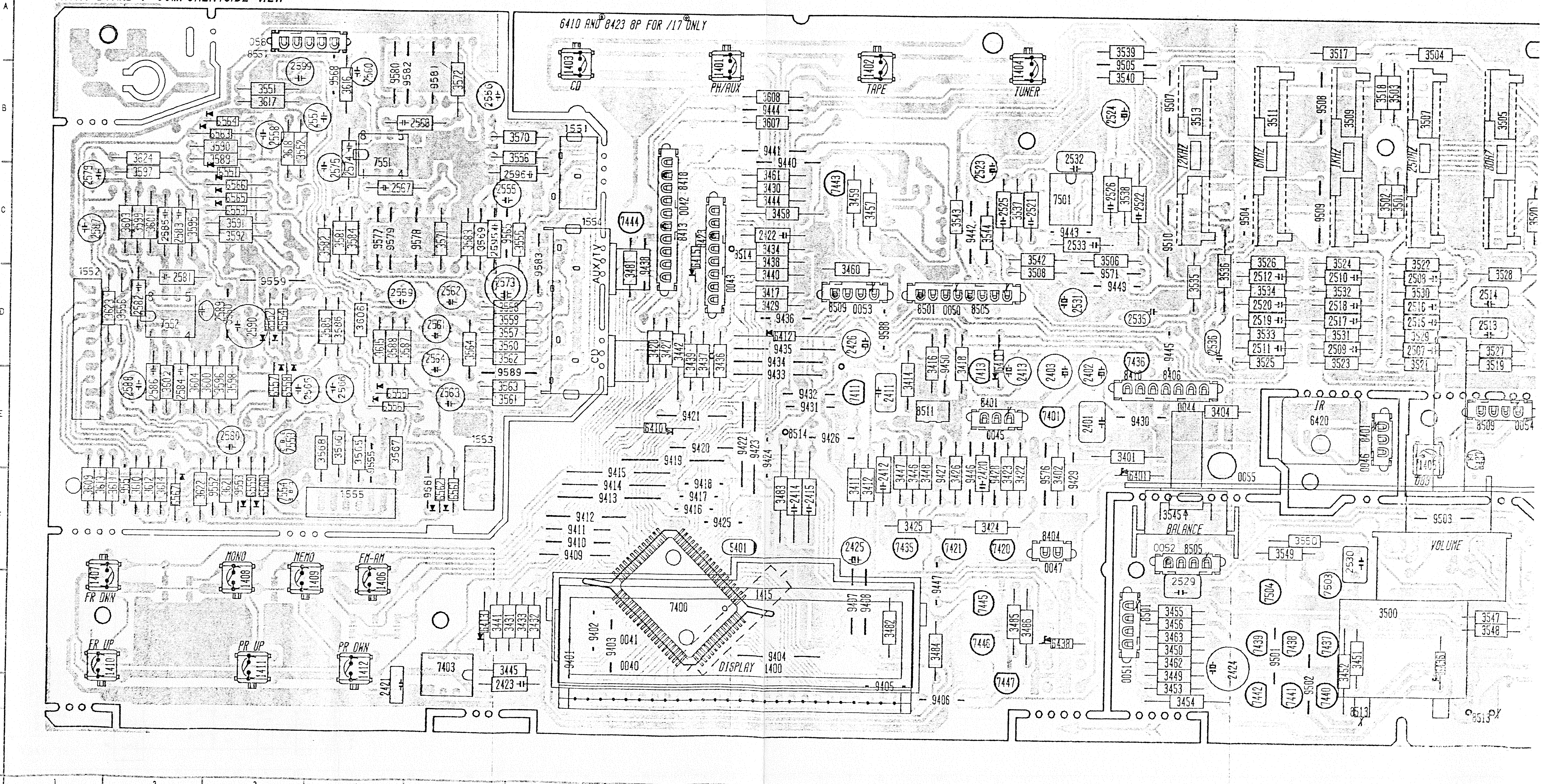
RF PART

0040	G 7	0058	A 3	1415	G 8	2415	F 9	2511	D13	2525	C10	2560	B 4	2581	D 2
0041	G 7	1400	G 8	1426	G16	2420	E10	2512	C13	2526	C11	2561	D 5	2582	D 2
0042	C 7	1401	A 8	1551	B 6	2421	H 4	2513	D15	2529	F12	2562	D 5	2583	C 2
0043	D 8	1402	A 9	1552	D 1	2422	C 8	2514	D15	2530	F14	2563	E 5	2584	E 2
0044	E12	1403	A 6	1553	E 5	2423	H 5	2515	D14	2531	D11	2564	D 5	2585	C 2
0045	E10	1404	A11	1554	C 6	2424	G13	2516	D14	2532	B11	2565	E 4	2586	E 2
0046	E14	1405	E15	1555	F 4	2425	F 9	2517	D14	2533	C11	2566	E 4	2587	C 1
0047	F11	1406	G 4	2401	E11	2426	D [illegible]	2518	D14	2535	D12	2567	C 4	2588	E 2
0050	D10	1407	G 1	2402	D11	2505	D16	2519	D13	2536	D12	2568	B 5	2589	D 3
0051	G12	1408	G 3	2403	D11	2506	D16	2520	D13	2555	C 5	2573	D 5	2590	D 3
0052	F12	1409	G 4	2411	E 9	2507	D14	2521	C11	2556	B 5	2574	B 4	2599	B 3
0053	D 9	1410	G 2	2412	E 9	2508	C14	2522	C12	2557	B 4	2575	C 4		
0054	E16	1411	G 3	2413	D11	2509	D14	2523	B10	2558	B 3	2579	C 1		
0055	E13	1412	G 4	2414	F 8	2510	C14	2524	B11	2559	C 4	2580	E 3		

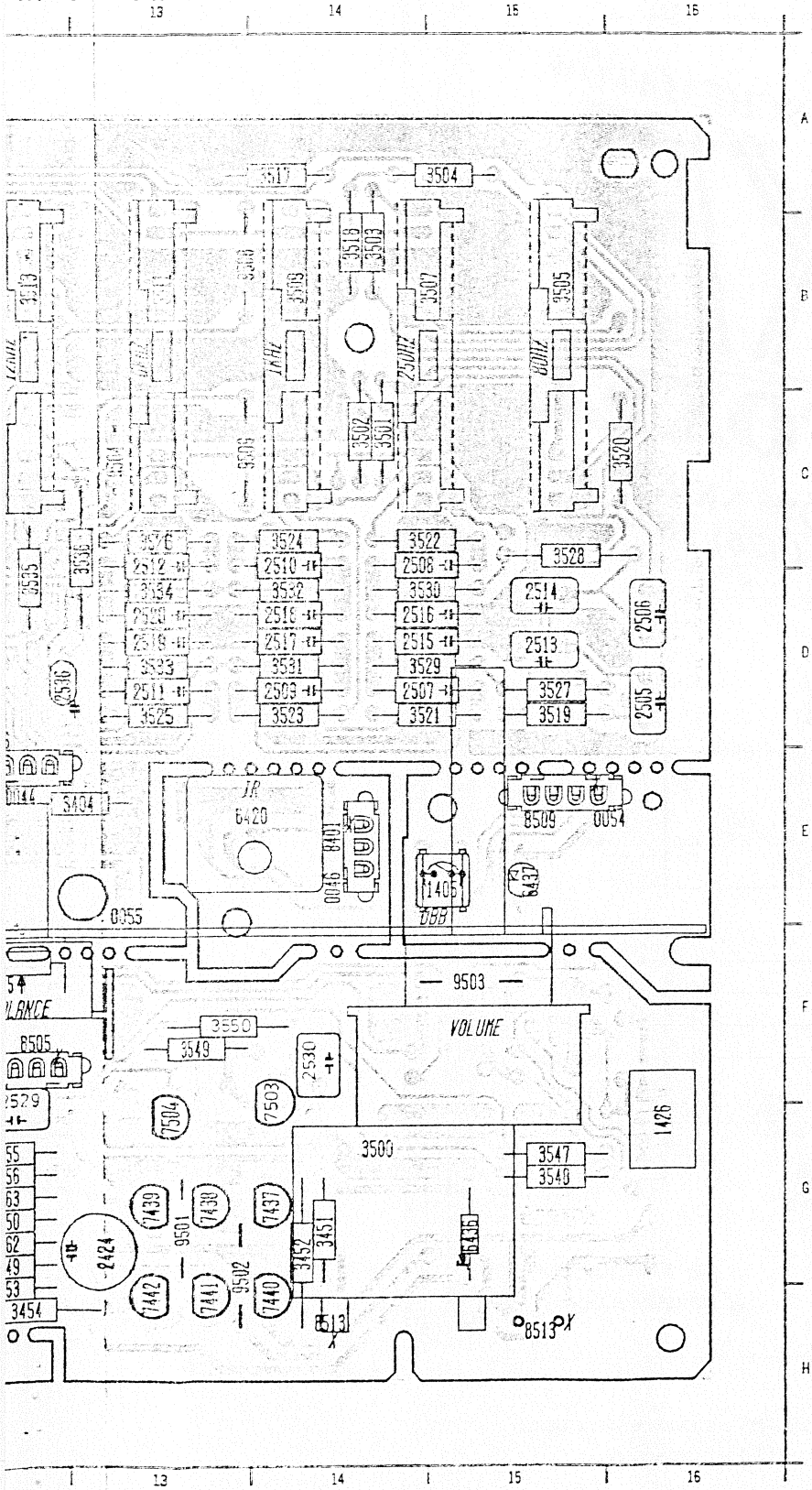
2595	C 5	3425	F10	3440	D 8	3455	G12	3486	G11	3518	B14	3532	D14	3548	G15
2596	C 5	3426	E10	3441	G 5	3456	G12	3500	G14	3519	D15	3533	D13	3549	F13
3401	E12	3427	D 7	3442	D 7	3457	C 9	3501	C14	3520	C16	3534	D13	3550	F13
3402	E11	3428	D 7	3444	C 8	3458	C 8	3502	C14	3521	D14	3535	D12	3551	B 3
3404	E13	3429	D 8	3445	G 6	3459	C 9	3503	B14	3522	C14	3536	C13	3552	B 3
3411	F 9	3430	C 8	3446	E10	3460	C 9	3504	A15	3523	D14	3537	C11	3555	C 6
3412	F 9	3431	G 6	3447	E 9	3461	C 8	3505	B15	3524	C14	3538	C12	3556	C 6
3414	E 9	3432	G 6	3448	E10	3462	G12	3506	C11	3525	D13	3539	A12	3557	D 5
3416	D10	3433	G 6	3449	G12	3463	G12	3507	B15	3526	C13	3540	B12	3558	D 5
3417	D 9	3434	C 8	3450	G12	3481	C 7	3508	C11	3527	D15	3542	C11	3559	D 5
3418	D10	3435	D 8	3451	G14	3482	G 9	3509	B14	3528	C15	3543	C10	3560	D 5
3422	E11	3437	D 7	3452	G14	3483	F 8	3511	B13	3529	D14	3544	C10	3561	E 5
3423	E10	3438	C 8	3453	G12	3484	G10	3513	B12	3530	D14	3545	F12	3562	D 5
3424	F10	3439	D 7	3454	H12	3485	G11	3517	A14	3531	D14	3547	G15	3563	E 5

3564	D 5	3586	D 4	3602	E 2	3618	B 3	6420	E14	6561	E 5	7435	F 9	750	
3565	E 4	3587	D 5	3603	C 2	3606	D 4	6436	G15	6562	E 5	7436	D12	750	
3566	E 4	3588	D 4	3604	E 2			6437	E15	6563	B 3	7437	G14	755	
3567	E 4	3589	B 3	3607	B 8	3621	F 3	6438	G11	6564	B 3	7438	G13	755	
3568	E 4	3590	B 3	3608	B 8	3622	F 2	6551	C 3	6565	C 3	7439	G13	755	
3569	C 5	3591	C 3	3609	F [illegible]	3623	D 1	6552	D 3	6566	C 3	7440	H14	755	
3570	B 6	3592	C 3	3610	F 2	3624	C 2	6553	C 3	6567	F 2	7441	H13		
3571	C 5	3595	C 2	3611	F 2	5401	F 8	6554	D 3	7400	G 7	7442	H13		
3572	B 5	3596	E 3	3612	F 2	6401	E12	6555	E 4	7401	E11	7443	C 9		
3581	C 4	3597	C 2	3613	F 1	6410	E 7	6556	E 4	7403	G 5	7444	C 7		
3582	C 4	3598	E 3	3614	F 2	6411	D10	6557	E 3	7411	E 9	7445	G10		
3583	C 5	3599	C 2	3615	D 4	6412	D 8	6558	E 3	7413	D10	7446	G10		
3584	C 4	3600	E 2	3616	B 4	6413	G 5	6559	F 3	7420	F10	7447	G10		
3585	D 4	3601	C 2	3617	B 3	6415	C 7	6560	F 3	7421	F10	7501	C11		

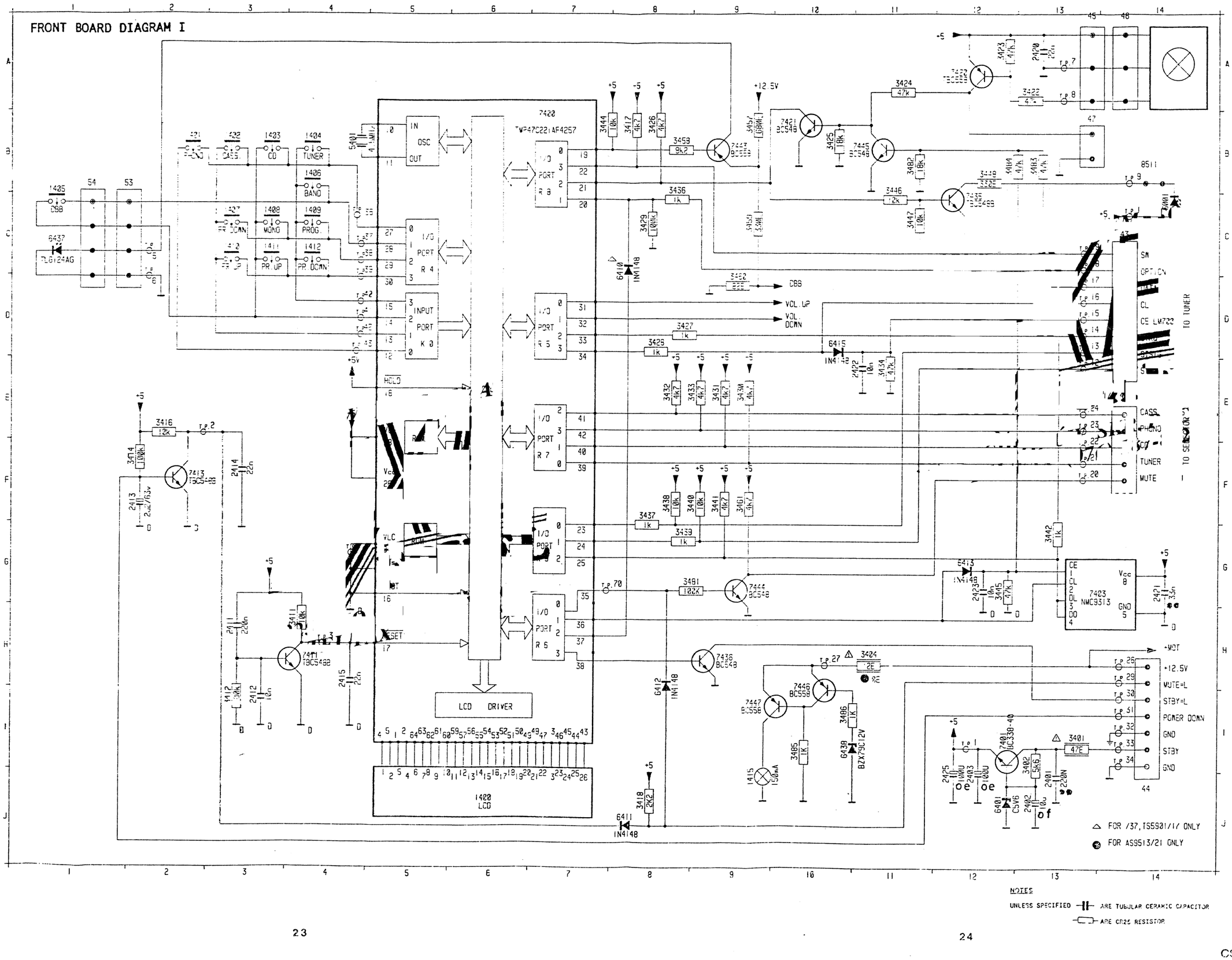
FRONT BOARD / COMPONENTSIDE VIEW



3602	E 2	3618	B 3	6400	E14	6661	E 5	7435	F 9	7503	G12				
3603	C 2	3606	D 4	6436	G15	6662	E 5	7436	D12	7504	F13				
3604	E 2			6437	F15	6663	B 3	7437	G14	7551	B 4				
3607	B 9	3621	F 3	6438	G11	6664	B 3	7438	G13	7552	D 2				
3608	B 8	3622	F 2	6551	C 3	6665	C 3	7439	G13	7553	E 3				
3609	F 1	3623	D 1	6552	D 3	6666	C 3	7440	H14	7554	F 3				
3610	F 2	3624	C 2	6553	C 3	6667	F 2	7441	H13						
3611	F 2	6401	F 8	6554	D 3	7400	G 7	7442	H13						
3612	F 2	6401	B12	6555	E 4	7401	E11	7443	C 9						
3613	F 1	6410	E 7	6556	E 4	7403	G 5	7444	C 7						
3614	F 2	6411	D10	6557	E 3	7411	E 9	7445	G10						
3615	D 4	6412	D 8	6558	E 3	7413	D10	7446	G10						
3616	B 4	6413	C 5	6559	F 3	7420	F10	7447	G10						
3617	B 3	6415	C 7	6560	F 3	7421	F10	7501	C11						



	8401	E14	9502	G13	
	8401	E10	9503	F15	
	8404	F11	9504	C13	
	8406	D12	9505	A12	
A	8410	D12	9507	B12	
	8413	C 7	9508	B13	
	8418	C 7	9509	C13	
	8423	C 7	9510	C12	
	8501	G12	9551	F 2	
	8501	D10	9552	F 2	
	8505	D10	9553	F 3	
	8505	F12	9555	F 4	
B	8509	D 9	9556	D 2	
	8509	E15			
	8511	E10			
	8513	H14	9559	D 3	
	8513	H15	9560	D 3	
	8514	C 8	9561	F 5	
	8514	E 8	9565	C 5	
	8551	A 3	9568	B 4	
	9401	D 6	9571	C11	
C	9402	G 6	9575	E11	
	9403	G 7	9577	C 4	
	9404	G 9	9578	C 5	
	9405	H 9	9579	C 4	
	9406	H10	9580	B 4	
	9407	G 9	9581	B 5	
	9408	G 9	9582	B 4	
	9409	F 6	9583	C 5	
D	9410	F 6	9588	D 9	
	9411	F 6	9589	E 5	
	9412	F 6			
	9413	F 6			
	9414	F 6			
	9415	E 7			
	9416	F 7			
	9417	F 7			
	9418	F 7			
E	9419	E 7			
	9420	E 7			
	9421	E 7			
	9422	E 8			
	9423	E 8			
	9424	E 8			
	9425	F 8			
	9426	E 9			
F	9427	E10			
	9428	E10			
	9429	E11			
	9430	E12			
	9431	E 9			
	9432	E 8			
	9433	D 8			
	9434	D 8			
	9435	D 8			
G	9436	D 8			
	9438	C 7			
	9440	B 8			
	9441	B 8			
	9442	C10			
	9443	C11			
	9444	B 8			
	9445	D12			
H	9446	E10			
	9447	C10			
	9449	D12			
	9450	D10			
	9501	G13			



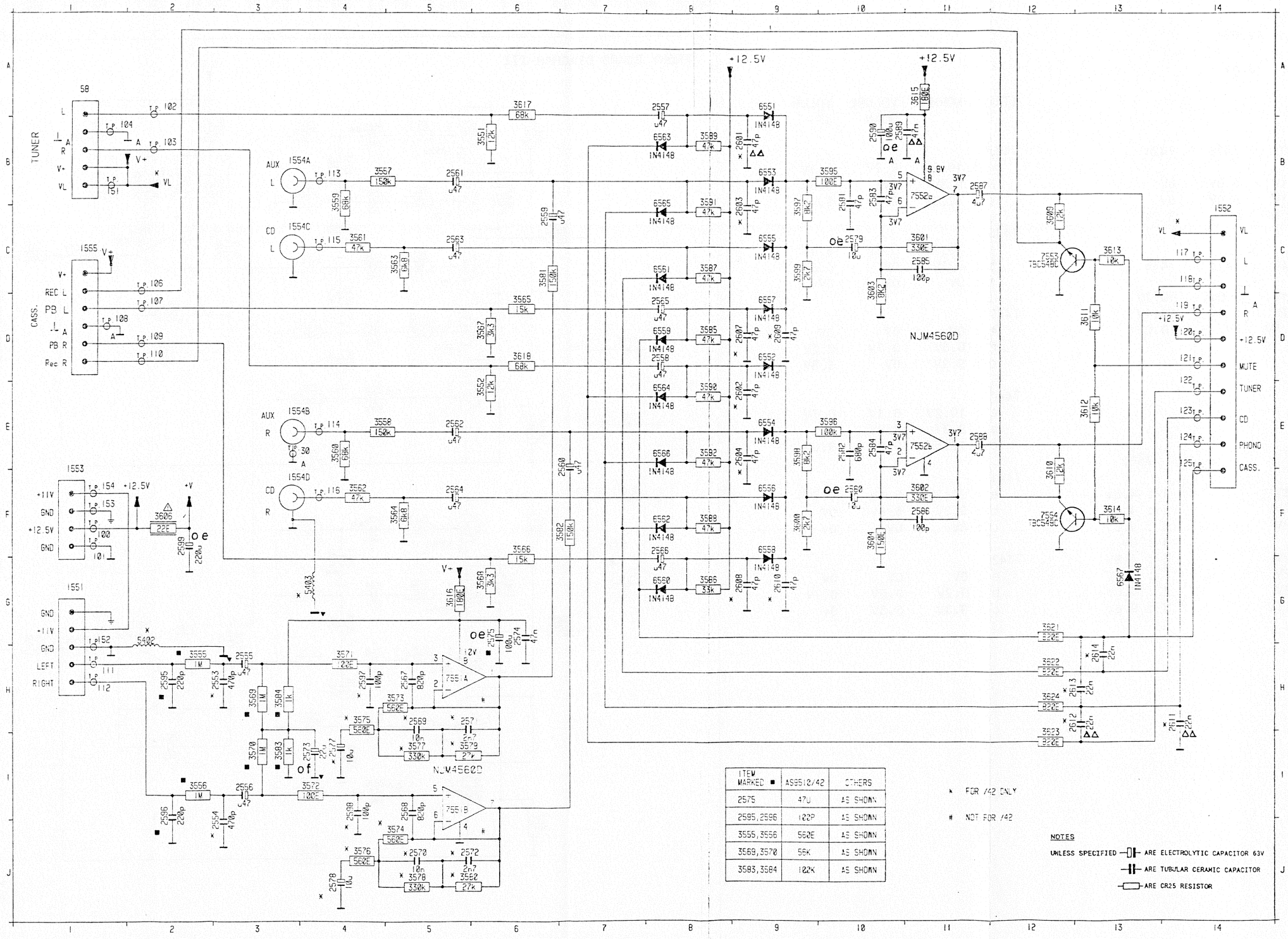
42	E14
43	C14
44	J14
45	A13
46	A14
47	B13
53	B 1
54	B 1
1400	J 6
1401	B 2
1402	B 3
1403	B 3
1404	B 4
1405	C 1
1406	B 4
1407	C 3
1408	C 3
1409	C 4
1410	C 3
1411	C 3
1412	C 4
1415	J 9
2401	J13
2402	J13
2403	J12
2411	H 3
2412	I 3
2413	F 2
2414	F 3
2415	H 4
2420	A13
2421	G14
2422	E11
2423	G12
2425	J12
3401	I13
3402	I13
3404	H11
3411	H 4
3412	I 3
3414	F 2
3416	E 2
3417	B 8
3418	J 8
3422	A13
3423	A12
3424	A11
3425	B10
3426	B 8
3427	D 9
3428	D 8
3429	C 8
3430	E 9
3431	E 9
3432	E 8
3433	E 9
3434	E11
3436	B 8
3437	F 8
3438	F 8
3439	G 8
3440	F 9
3441	F 9
3442	G13
3444	B 7
3445	G12
3446	B11
3447	C11
3448	B12
3457	B 9
3459	B 8
3450	C 9
3460	D 9
3451	F 9
3481	G 9
3482	B11
3483	B13
3484	B12
3485	I10
3486	I10
5401	B 4
6001	C14
6401	J12
6410	C 8
6411	J 8
6412	H 8
6413	G12
6415	D10
6437	C 1
6438	I10
7401	I12
7403	G13
7411	H 4
7413	F 2
7420	A12
7421	B10
7435	C12
7436	H 9
7443	B 9
7444	G 9
7445	B11
7446	I10
7447	I 9
8511	B14

NOTES

UNLESS SPECIFIED ⊣⊢ ARE TUBULAR CERAMIC CAPACITOR

▭ ARE CR25 RESISTOR

PILOT BOARD DIAGRAM II



+V : 11.0V

MOT : 12.5V

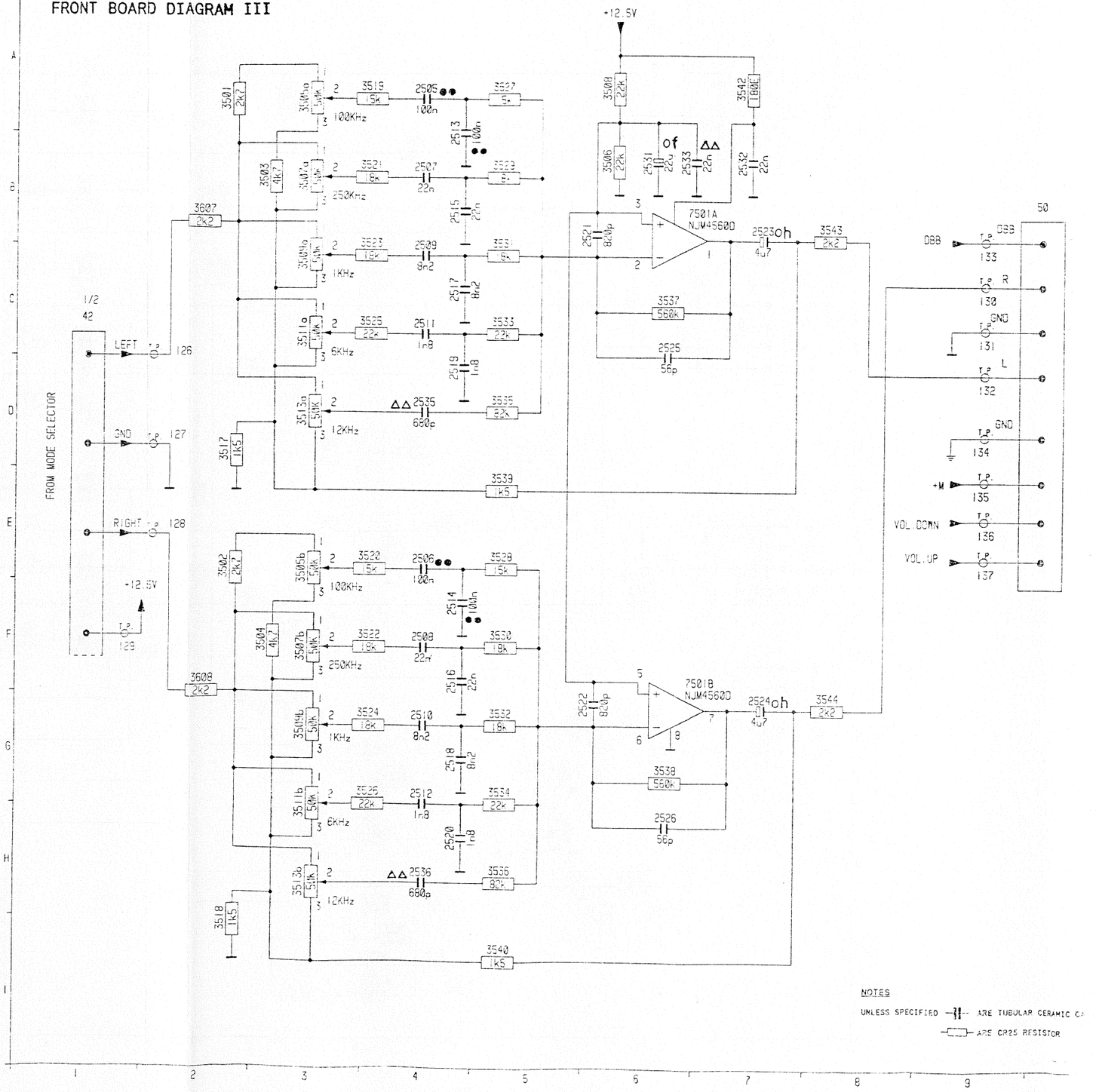
	7401	7420	7421
e :	5.1V	5.0V	0V
b :	5.7V	5.0V	0V
c :	16.5V	0V	3.7V

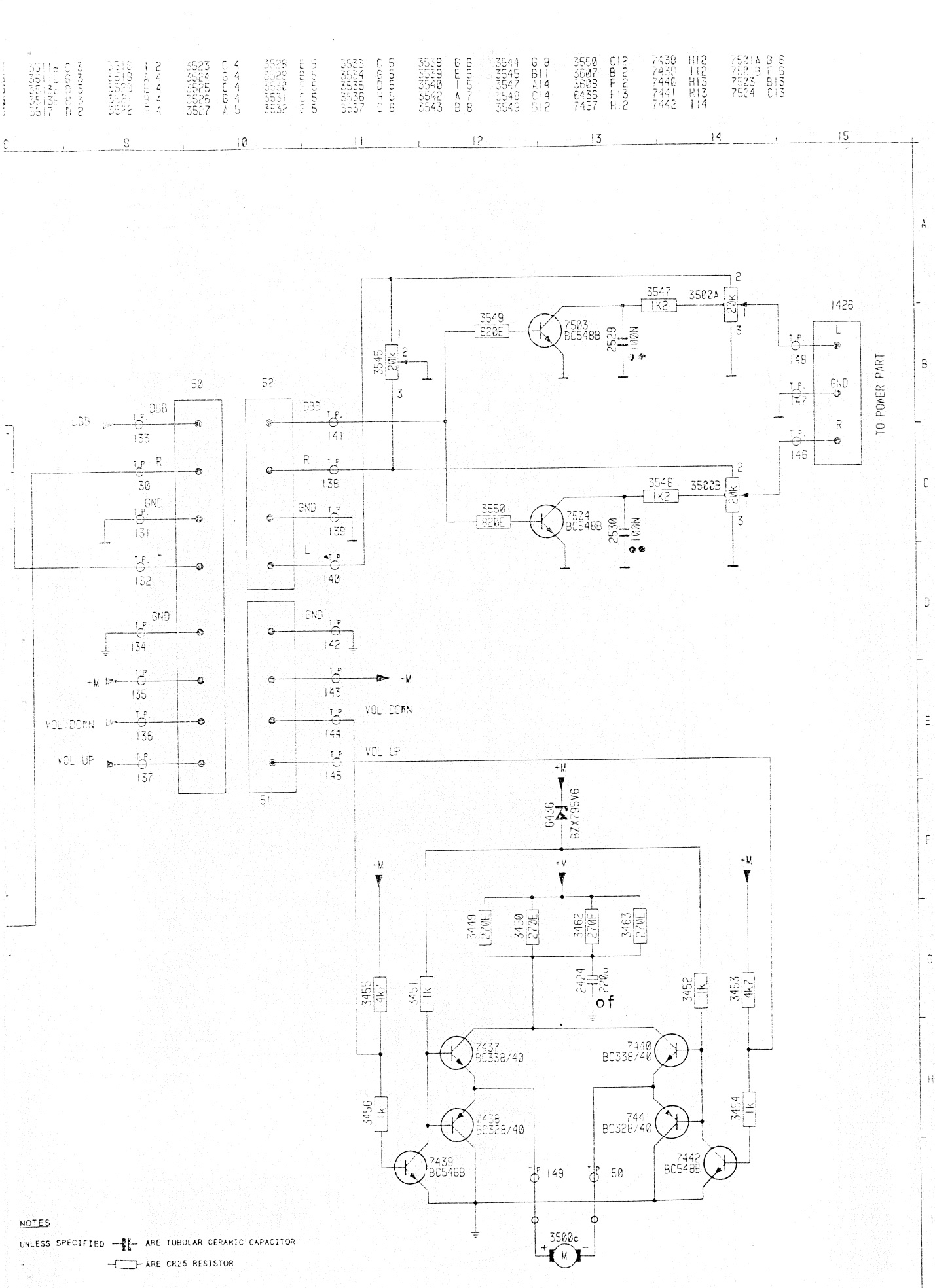
	7443	7445	7446
e :	5.1V	5.0V	10.7V
b :	5.7V	5.0V	10.1V
c :	16.5V	0V	10.0V

	7501	7552
1 :	6.2V	4.8V
2 :	6.2V	4.8V
3 :	6.2V	4.8V
4 :	0V	0V
5 :	6.2V	4.8V
6 :	6.2V	4.8V
7 :	5.2V	4.8V
8 :	11.7V	9.6V

ITEM	NORMAL	VOLUME DOWN	VOLUM UP
7437			
e :	10.2V	0.7V	6.1V
b :	9.3V	0V	6.8V
c :	12.5V	9.0V	9.0V
7438			
e :	10.2V	0.7V	6.1V
b :	9.3V	0V	6.8V
c :	0V	0V	0V
7439			
e :	0V	0V	0V
b :	0.5V	0.7V	0.2V
c :	9.3V	0V	6.8V
7440			
e :	10.2V	6.1V	0.7V
b :	9.3V	6.8V	0V
c :	12.5V	9.0V	9.0V
7441			
e :	10.2V	6.1V	0.7V
b :	9.3V	6.8V	0V
c :	0V	0V	0V
7442			
e :	0V	0V	0V
b :	0.2V	0.2V	0.7V
c :	9.3V	6.8V	0V

FRONT BOARD DIAGRAM III





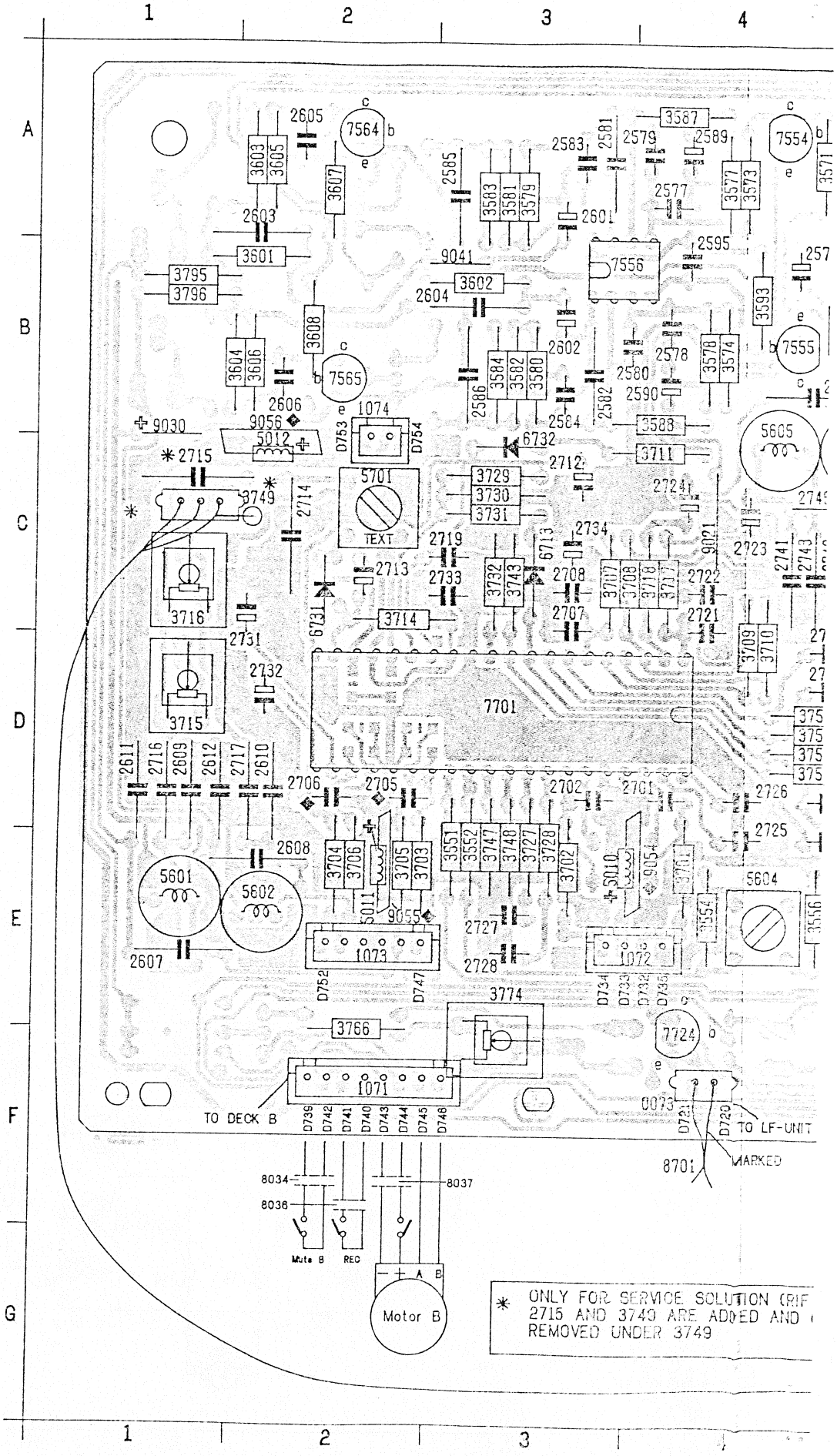
NOTES

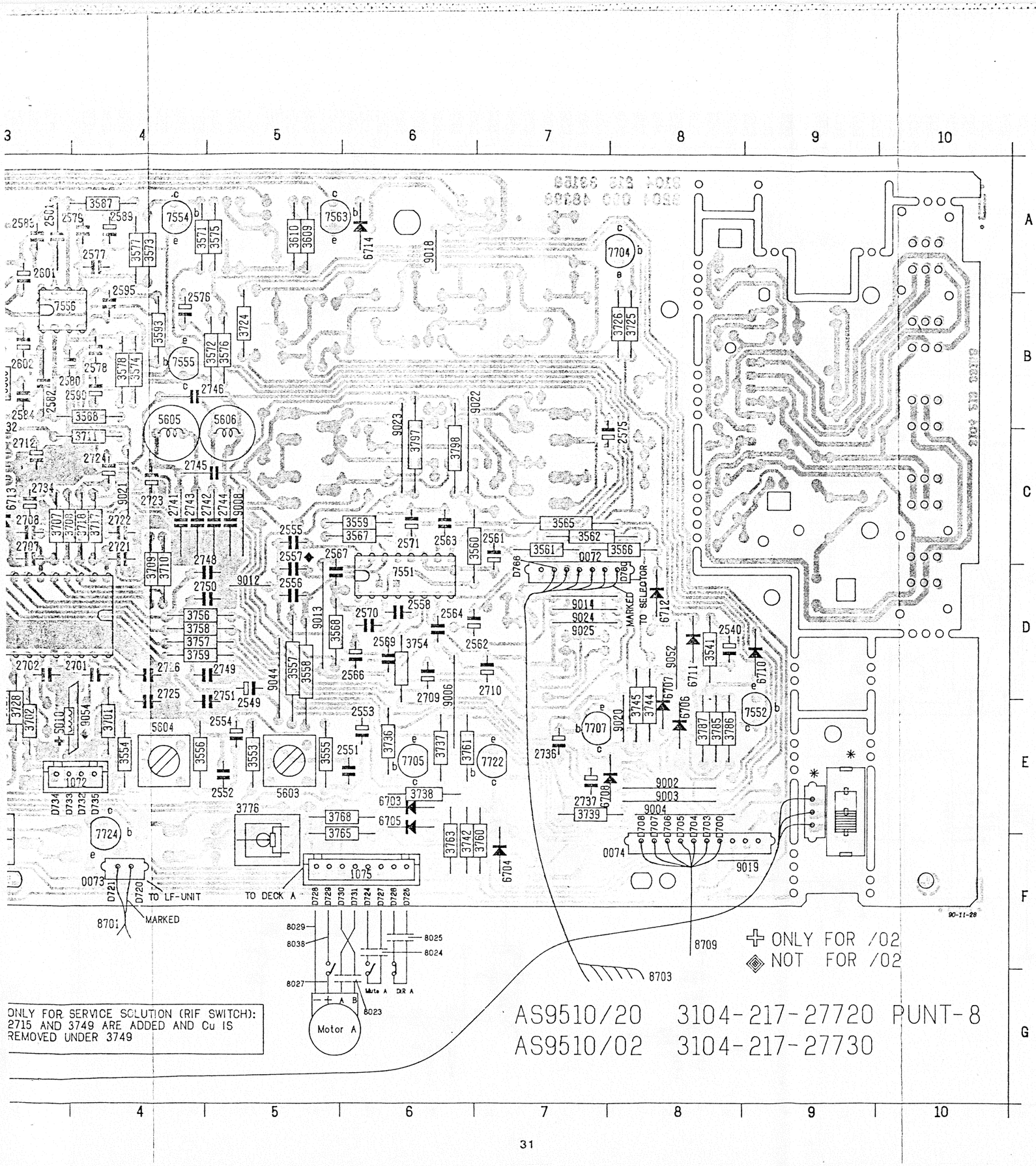
UNLESS SPECIFIED —||— ARE TUBULAR CERAMIC CAPACITOR

—▭— ARE CR25 RESISTOR

RECORDER BOARD

0072	C 7	2727	E 3	3716	C 1	7704	A 8
0073	F 4	2728	E 3	3717	C 4	7705	E 6
0074	F 8	2731	D 2	3718	C 4	7707	E 7
1071	F 2	2732	D 2	3724	B 5	7722	E 7
1072	E 4	2733	C 3	3725	B 8	7724	F 4
1073	E 2	2734	C 3	3726	B 8	8701	F 4
1074	B 2	2735	E 7	3727	E 3	8703	G 8
1075	F 6	2737	E 7	3728	E 3	8709	F 8
2540	D 8	2741	C 4	3729	C 3	9002	E 8
2549	E 5	2742	C 5	3730	C 3	9003	E 8
2551	E 6	2743	C 4	3731	C 3	9004	E 8
2552	E 5	2744	C 5	3732	C 3	9006	D 6
2553	E 6	2745	C 4	3736	E 6	9008	C 5
2554	E 5	2746	B 5	3737	E 6	9012	D 5
2555	C 5	2748	D 5	3738	E 6	9013	D 5
2556	D 5	2749	D 5	3739	E 7	9014	D 7
2557	C 5	2750	D 5	3742	F 6	9018	A 6
2558	D 6	2751	E 5	3743	C 3	9019	F 9
2561	C 7	3541	D 8	3744	E 8	9020	E 8
2562	D 7	3551	E 3	3745	E 8	9021	C 4
2563	C 6	3552	E 3	3747	E 3	9022	B 7
2564	D 6	3553	E 5	3748	E 3	9023	B 6
2566	D 6	3554	E 4	3749	C 2	9024	D 7
2567	C 5	3555	E 5	3754	D 6	9025	D 7
2569	D 6	3556	E 4	3756	D 4	9030	B 1
2570	D 6	3557	D 5	3757	D 4	9041	B 3
2571	C 6	3558	D 5	3758	D 4	9044	D 5
2575	C 8	3559	C 6	3759	D 4	9052	D 8
2576	B 4	3560	C 7	3760	F 7	9054	E 4
2577	A 4	3561	C 7	3761	E 6	9055	E 2
2578	B 4	3562	C 7	3763	F 6	9056	B 2
2579	A 4	3565	C 7	3765	F 6		
2580	B 4	3566	C 8	3766	F 2		
2581	A 3	3567	C 6	3768	E 6		
2582	B 3	3568	D 5	3774	E 3		
2583	A 3	3571	A 4	3776	E 5		
2584	B 3	3572	B 5	3785	E 8		
2585	A 3	3573	A 4	3786	E 8		
2586	B 3	3574	B 4	3787	E 8		
2589	A 4	3575	A 5	3795	B 1		
2590	B 4	3576	B 5	3796	B 1		
2595	B 4	3577	A 4	3797	C 6		
2601	A 3	3578	B 4	3798	C 6		
2602	B 3	3579	A 3	5010	E 3		
2603	A 2	3580	B 3	5011	E 2		
2604	B 2	3581	A 3	5012	C 2		
2605	A 2	3582	B 3	5601	E 1		
2606	B 2	3583	A 3	5602	E 2		
2607	E 1	3584	B 3	5603	E 5		
2608	E 2	3587	A 4	5604	E 4		
2609	D 1	3588	B 4	5605	B 4		
2610	D 2	3593	B 4	5606	B 5		
2611	D 1	3601	B 2	5701	C 2		
2612	D 1	3602	B 3	6703	E 6		
2701	D 4	3603	A 2	6704	F 7		
2702	D 3	3604	B 2	6705	E 6		
2705	D 2	3605	A 2	6706	E 8		
2706	D 2	3606	B 2	6707	D 8		
2707	C 3	3607	A 2	6708	E 8		
2708	C 3	3608	B 2	6710	D 9		
2709	E 6	3609	A 5	6711	D 8		
2710	D 7	3610	A 5	6712	D 8		
2712	C 3	3701	E 4	6713	C 3		
2713	C 2	3702	E 3	6714	A 6		
2714	C 2	3703	E 2	6731	C 2		
2715	C 1	3704	E 2	6732	C 3		
2716	D 1	3705	E 2	7551	D 6		
2717	D 2	3706	E 2	7552	E 9		
2719	C 3	3707	C 3	7554	A 4		
2721	C 4	3708	C 4	7555	B 4		
2722	C 4	3709	D 4	7556	B 3		
2723	C 4	3710	D 4	7563	A 5		
2724	C 4	3711	C 4	7564	A 2		
2725	D 4	3714	C 2	7565	B 2		
2726	D 4	3715	D 1	7701	D 3		





Bias Oscillator Adjustment

Adjust	Voltages across the 3703 or 3704
3715	13mV in Cr mode
3716	13mV in Cr mode

7564

e : 5.9V
b : 7.1VFe
0VCr
c : 6.3VFe
6.0VCr

7565

e : 5.9V
b : 7.1VFe
0VCr
c : 6.3VFe
6.0VCr

7704

e : 0V
b : 0V
0.7V
c : 12.4V
0.1V

7705

e : 0V
b : 0V
0.7V
c : 10.2V
0.1V

7707

e : 12.2rec
11.5V
0V
b : 11.9V
10.9V
0V
c : 0V
11.4V

7552

e : 0V
b : 0V
0.8rec
c : 11.6V
0.1Vrec

7554

e : 5.9V
b : 6.6V
0.3Vrec
c : 5.9V

7555

e : 5.9V
b : 6.6V
0.3Vrec
c : 5.9V

7563

e : 12.4VFe
6.0VCr
b : 11.7VFe
6.0VCr
c : 12.4VFe
0VCr

7701

1 : 5.9V
2 : 5.9V
3 : 5.9V
4 : 5.9V
5 : 5.9V
6 : 5.9V
7 : 9.6V
0.1V
8 : 10.3V
0.1V
9 : 10.2V
10 : 0V
5.5Vrec
11 : 0.3V
12 : 5.9V
13 : 0V
14 : 11.7V
15 : 5.1V
16 : 11.7V
17 : 0V
18 : 11.0V
19 : 0.7V
20 : 11.7V
21 : 5.9V
22 : 5.9V
23 : 5.9V
24 : 5.9V
25 : 5.9V
26 : 5.9V
27 : 5.9V
28 : 5.9V
29 : 5.9V
30 : 5.9V
31 : 5.9V
32 : 6.0V
33 : 6.0V
34 : 5.9V
35 : 5.7V
36 : 5.9V
37 : 5.8V
38 : 5.9V
39 : 6.2V
40 : 6.2V

7551

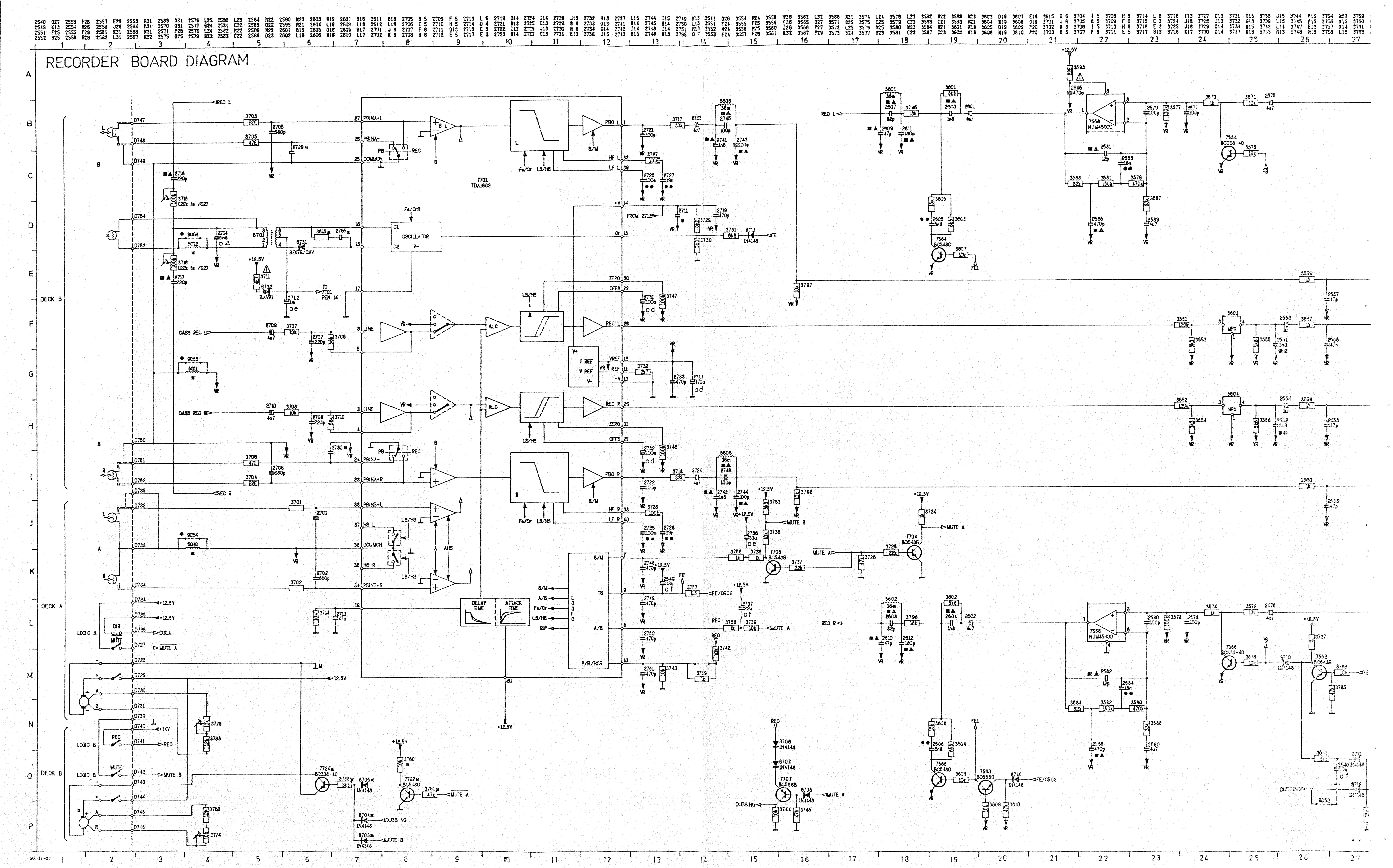
1 : 5.9V
2 : 12.6V
3 : 5.9V
4 : 5.9V
5 : 0Vdn
12.7Vdf
6 : 5.9V
7 : 0.4V
8 : 5.9V
9 : 5.9V
10 : 0.4V
11 : 5.9V
12 : 0V
3.9Vrec
11.0V
13 : 12.0V
14 : 5.9V
15 : 0V
16 : 5.9V

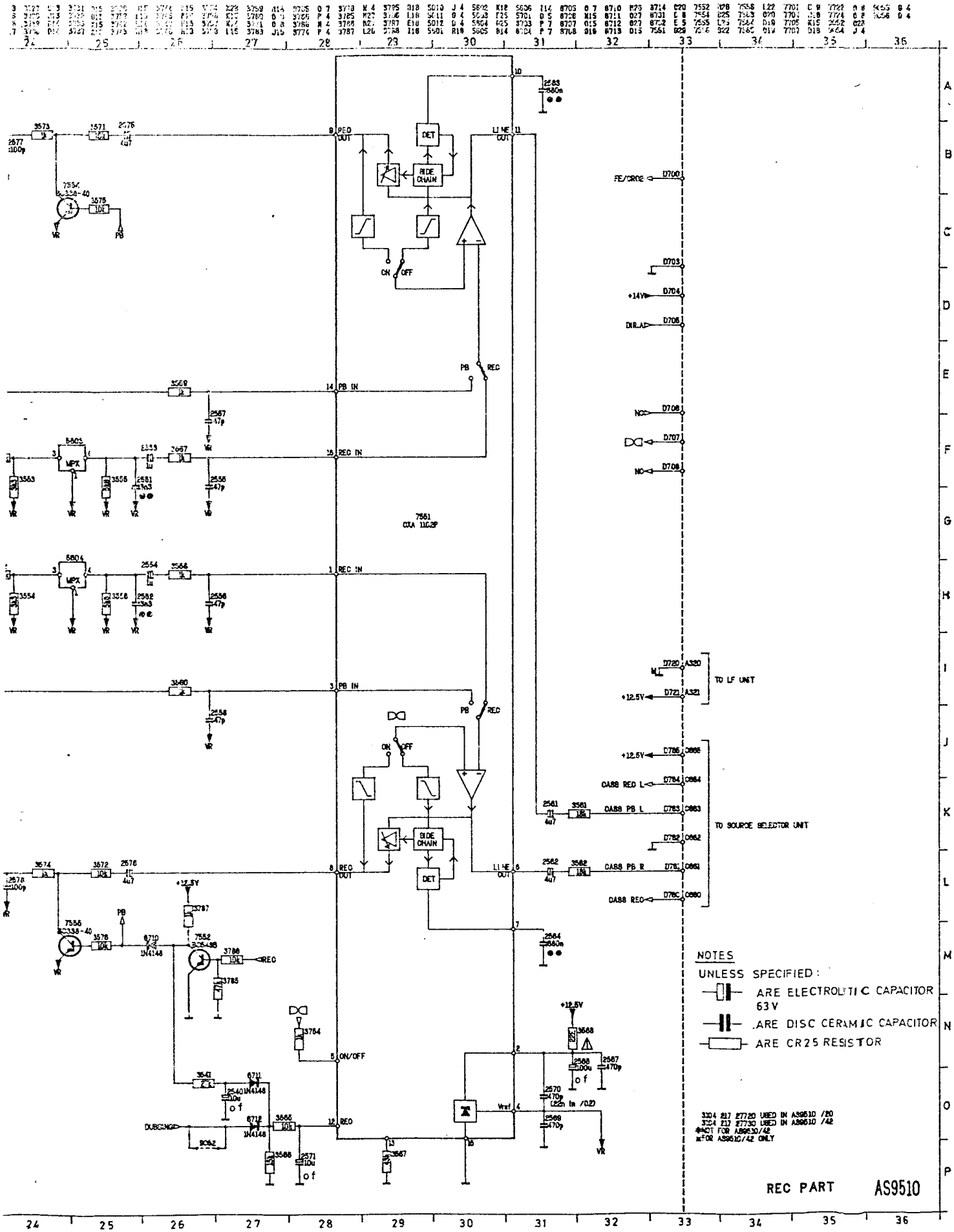
7556

1 : 5.9V
2 : 5.9V
3 : 5.9V
4 : 0V
5 : 5.9V
6 : 5.9V
7 : 5.9V
8 : 12.6V

....V measured in tape on position
V measured in tape A play position
V measured in tape dubbing on position
....Vrec measured in tape recording position
....Vdn measured in dolby on position
....Vdf measured in dobly off position
....VFe measured in tape Fe on position
....VCr measured in tape Cr on position

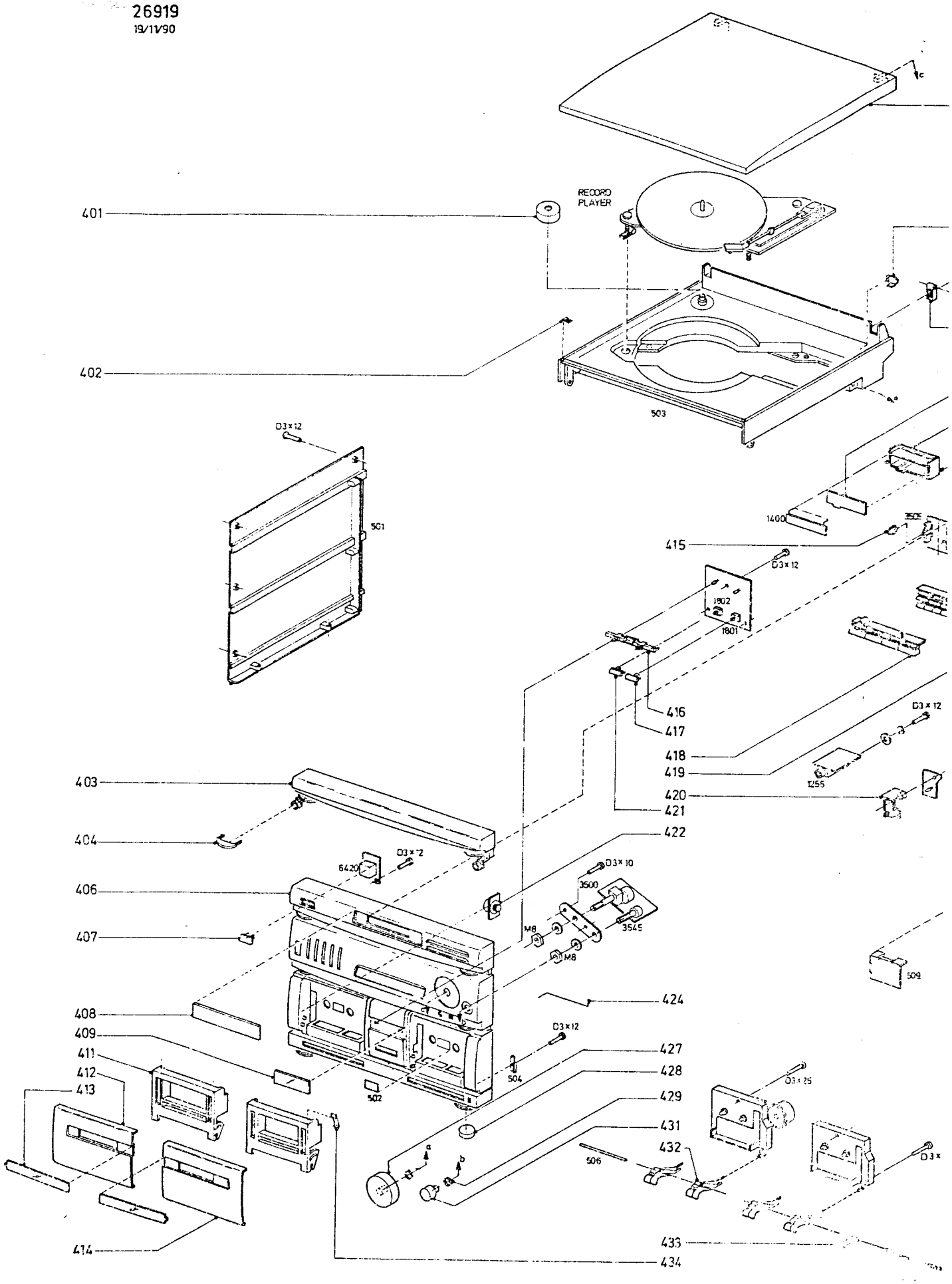
RECORDER BOARD DIAGRAM

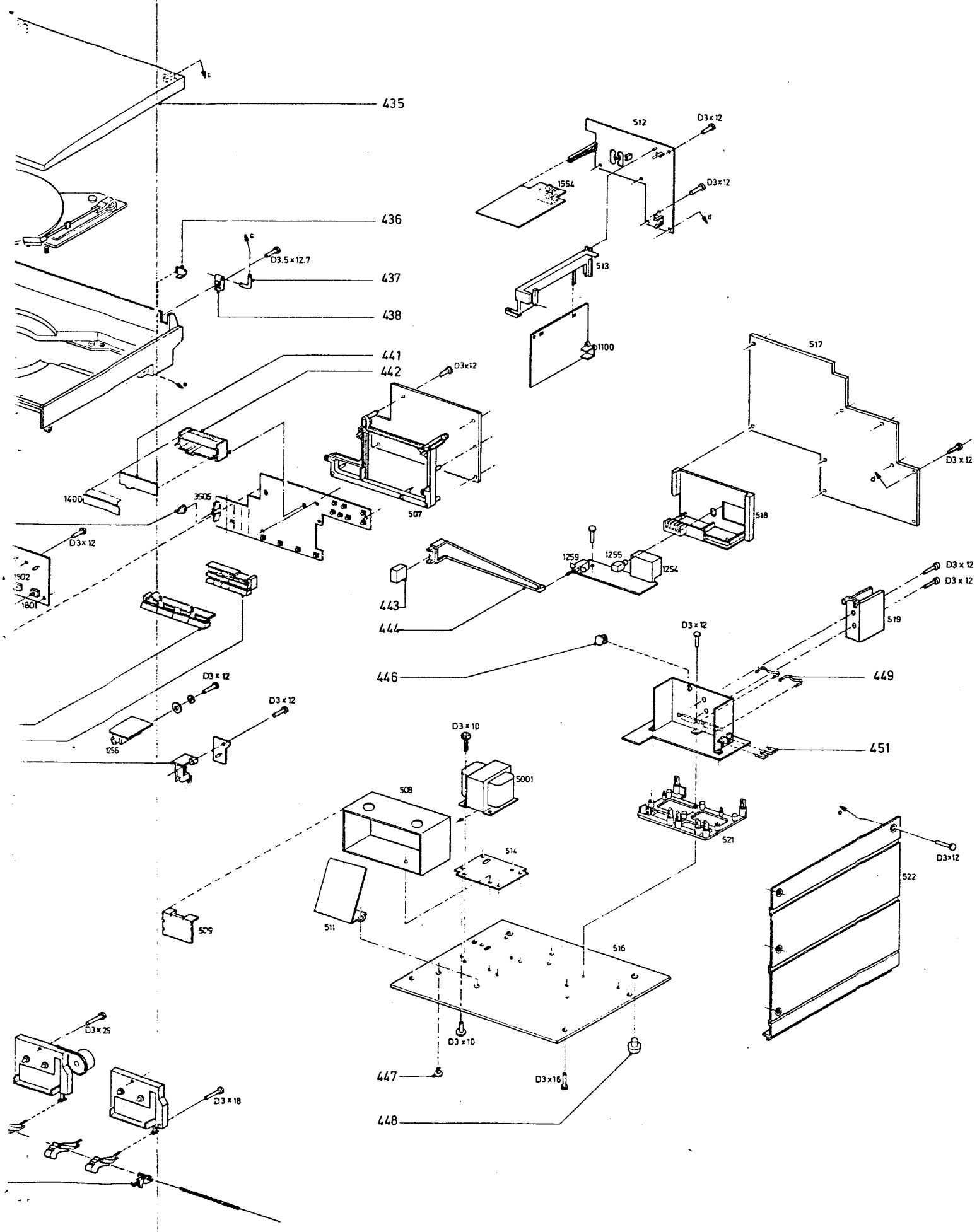



REC PART AS9510
NOTES
UNLESS SPECIFIED :
ARE ELECTROLYTIC CAPACITOR 63V
ARE DISC CERAMIC CAPACITOR
ARE CR25 RESISTOR
TO LF UNIT
TO SOURCE SELECTOR UNIT
7551 CUA 11C2P
DET
SIDE CHAIN
ON/OFF
PB
REC
MPX
DUBBING
+12.5V
+14V
DIR.A
NC
OASS REC L
OASS PB L
OASS PB R
OASS REC
LINE OUT
REC OUT
PB IN
REC IN

CS 33 952

26919
19/11V90




435
436
437
438
441
442
D3.5 x 12.7
D3x12
512
1554
513
1100
517
518
519
1400
3505
507
1902
1801
D3 x 12
1259
1255
1254
443
444
446
449
451
1256
D3 x 10
5001
508
514
509
511
516
521
522
447
448
D3 x 25
D3 x 18
D3x16

401		4822 466 92642		414	&	4822 443 63264		434		4822 492 52197
402		4822 466 92643		415		4822 411 61667		435		4822 462 71645
403		4822 426 40431		417		4822 410 60588		436		4822 460 10589
403	&	4822 426 40433		418		4822 410 60585		437		4822 417 10631
404		4822 426 60577		419		4822 410 60584		438		4822 417 10631
406		4822 426 51467		420		4822 410 60586		441		4822 466 70666
406	&	4822 426 51469		421		4822 410 61101		442		4822 256 91477
407		4822 450 61524		422		4822 529 10257		443		4822 413 70269
408		4822 333 40404		424		4822 492 70732		444		4822 535 93055
409		4822 450 61683		427		4822 413 41561		446		4822 401 11336
411		4822 443 63037		428		4822 462 40683		447		4822 532 52321
412		4822 443 63251		429		4822 492 51374		448		4822 462 41535
412	&	4822 443 63265		431		4822 413 41562		449		4822 255 40128
413		4822 450 61525		432		4822 410 60587		451		5322 255 40397
414		4822 443 63249		433		4822 410 60589				
IFU		4822 736 21036								

& For TS5901/17 only

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

MISCELLANEOUS

1100 $	AERIAL SOCKET	4822 267 31128
1104 &	AERIAL CONNECTOR	4822 267 40668
1105	SLIDE SWITCH	4822 277 30862
1254	SPEAKER SOCKET	4822 267 31107
1255	REMOTE SOCKET	4822 267 31051
1256	SOCKET HEADPHONE	4822 267 30968
1259 △	POWER SWITCH	4822 276 11567
1262 △	VOLTAGE SELECTOR	4822 272 10269
1302 △	FUSE T5A	4822 253 10065
1302 &△	FUSE T6.3A	4822 252 51123
1304 &△	FUSE T1.25A	4822 253 30334
1305 $△	FUSE T1.25A	4822 071 51252
1400	LCD DISPLAY	4822 130 90954
1401	SWITCH KEY	4822 276 12465
1402	SWITCH KEY	4822 276 12465
1403	SWITCH KEY	4822 276 12465
1404	SWITCH KEY	4822 276 12465
1405	SWITCH KEY	4822 276 12465
1406	SWITCH KEY	4822 276 12465
1407	SWITCH KEY	4822 276 12465
1408	SWITCH KEY	4822 276 12465
1409	SWITCH KEY	4822 276 12465
1410	SWITCH KEY	4822 276 12465
1411	SWITCH KEY	4822 276 12465
1412	SWITCH KEY	4822 276 12465
1415	LAMP 12V 150mA	4822 134 40965
1554	SOCKET CINCH	4822 266 30293
1801	SWITCH PUSH 2P2T	4822 276 12639
1802	SWITCH PUSH 2P2T	4822 276 12639
5109	CERAM FILTER	4822 242 73546
5110	X'TAL 7.2MHZ	4822 303 50034
5401	RESONATOR 4.5MHZ	4822 242 73577
5603	FILTER	4822 242 73768
5604	FILTER	4822 242 73768
¥	AK271/20	4822 445 10274
@	REMOTE CONTROL	4822 218 10323
&	REMOTE CONTROL	4822 218 10356

CAPACITORS

2102	CHIP 100pF 5%	5322 122 32531
2103	CHIP 470pF	4822 122 31727
2105	TRIMMER 3-11pF	4822 125 60101
2107	CHIP 470pF	5322 122 32268
2108	CHIP 470pF	4822 122 31727
2109	CHIP 6.8pF	5322 122 32269
2110	CHIP 470pF	4822 122 31727
2112	CHIP 150pF	4822 122 31808
2113	CHIP 1nF	5322 122 34123
2114	CHIP 220nF	4822 122 32927
2115	CHIP 220nF	4822 122 32927
2118	CHIP 22nF	4822 122 31797
2120	CHIP 100nF	4822 122 33496
2129	CHIP 470pF	5322 122 34099
2131	CHIP 1nF	5322 122 34123
2132	CHIP 22nF	5322 122 32654
2133	CHIP 470pF	4822 122 31727
2134	CHIP 220nF	4822 122 32927

2135 *	TRIMMER 3-11pF	4822 125 60101
2135 ♀	TRIMMER 5,2-30pF	4822 125 60102
2136 *	PP 100pF 630V	4822 121 51288
2137 *	CHIP 22pF	5322 122 32658
2138	CHIP 220nF	4822 122 32927
2139 *	TRIMMER 3-11pF	4822 125 60101
2139 ♀	TRIMMER 5,2-30pF	4822 125 60102
2140 *	PP 470pF 400V	5322 121 50999
2140 ♦	PP 560pF 400V	4822 121 51381
2140 æ	PP 510pF 400V	4822 121 51263
2141	CHIP 22nF	5322 122 32654
2142 *	PP 360pF 400V	4822 121 43253
2143 *	CHIP 22pF	4822 122 32482
2147	CHIP 4.7nF	4822 122 33339
2148	CHIP 4.7nF	4822 122 33339
2150	CHIP 22nF	5322 122 32654
2153	CHIP 18pF	5322 122 32965
2154	CHIP 15pF	5322 122 32481
2155	CHIP 820pF	4822 122 33806
2156	CHIP 22nF	5322 122 32654
2158	CHIP 470pF	4822 122 31727
2159	CHIP 470pF	5322 122 32268
2160	CHIP 470pF	5322 122 32268
2161	CHIP 220nF	4822 122 32927
2164	CHIP 5.6pF	5322 122 32967
2165	CHIP 220nF	4822 122 32927
2168	CHIP 3.3nF	4822 122 33891
2169	CHIP 22nF	5322 122 32654
2310 △	ELCAP 25V 47µF	4822 124 40433
2311 △	ELCAP 25V 100µF	4822 124 41525
2714	PS 63V 5.6nF	4822 121 50543

RESISTORS

3100	CHIP 22Ω	4822 051 20229
3102 #	CHIP 560Ω	4822 051 20561
3102 ♦	CHIP 330Ω	4822 051 20331
3103	CHIP 5.6kΩ	4822 051 20562
3107	CHIP 330Ω	4822 051 20331
3109	CHIP 4.7kΩ	4822 051 20472
3110	CHIP 2.2kΩ	4822 051 20222
3113	CHIP 270Ω	4822 051 20271
3114	CHIP 10kΩ	4822 051 20103
3115	TRIMMER 22kΩ	4822 100 11213
3116	CHIP 100Ω	4822 051 20101
3118	CHIP 10kΩ	4822 051 20103
3119	CHIP 10kΩ	4822 051 20103
3120	CHIP 1MΩ	4822 051 20135
3121	CHIP 1kΩ	4822 051 10102
3122	CHIP 1MΩ	4822 051 20135
3123	CHIP 1kΩ	4822 051 10102
3129	CHIP 100kΩ	4822 051 20104
3131	CHIP 0Ω	4822 051 20008
3136	CHIP 4.7kΩ	4822 051 20472
3137	CHIP 4.7kΩ	4822 051 20472
3139	CHIP 100kΩ	4822 051 20104
3140	1/8W 330Ω	4822 050 23301
3144	CHIP 1kΩ	4822 051 10102
3146 △	PR01 150Ω	4822 053 10151
3148	CHIP 5.6kΩ	4822 051 20562

3149	CHIP 470kΩ	4822 051 20474
3151	CHIP 22kΩ	4822 051 20223
3154	CHIP 33kΩ	4822 051 20333
3155	CHIP 22kΩ	4822 051 20223
3156	CHIP 5.6kΩ	4822 051 20562
3158	CHIP 330Ω	4822 051 20331
3159	CHIP 470Ω	4822 051 20471
3160	CHIP 27kΩ	4822 051 20273
3161	CHIP 0Ω	4822 051 20008
3163	CHIP 680Ω	4822 051 20681
3300 △	1/8W 150Ω	4822 050 21501
3301 △	1/8W 150Ω	4822 050 21501
3317 △	NFR25 47Ω	4822 116 80335
3318 △	NFR25 47Ω	4822 116 80335
3321 △	WWRST 5W 10Ω	4822 113 80504
3322 △	NFR25 3.9Ω	4822 052 10398
3323 △	NFR25 3.9Ω	4822 052 10398
3324 △	NFR25 3.9Ω	4822 052 10398
3325 △	NFR25 3.9Ω	4822 052 10398
3331 &△	VR37 10MΩ	4822 053 21106
3332 &△	VR37 10MΩ	4822 053 21106
3338 △	1/8W 10kΩ	4822 051 10103
3339 △	1/8W 10kΩ	4822 051 10103
3340 △	1/8W 22kΩ	4822 051 10223
3401 △	NFR25 47Ω	4822 052 10479
3404 △	NFR25 12Ω	4822 052 10129
3500	POTM 20K X 2	4822 102 10414
3505	POTM 50KB X 2	4822 101 21102
3507	POTM 50KB X 2	4822 101 21102
3509	POTM 50KB X 2	4822 101 21102
3511	POTM 50KB X 2	4822 101 21102
3513	POTM 50KB X 2	4822 101 21102
3545	POTM 20KB	4822 101 21103
3568 △	NFR25 22Ω	4822 052 10229
3593 △	NFR25 22Ω	4822 052 10229
3606 △	NFR25 22Ω	4822 052 10229
3711 △	NFR25 4.7Ω	4822 116 80311
3715	TRIMMER 100kΩ	4822 100 11163
3716	TRIMMER 100kΩ	4822 100 11163
3774	TRIMMER 10kΩ	4822 100 20166
3776	TRIMMER 10kΩ	4822 100 20166

COILS

5001 # △	TRANSFO MAINS	4822 146 30963
5001 @ △	TRANSFO MAINS	4822 146 30965
5102	FM RF COIL	4822 156 30947
5103	FM RF COIL	4822 156 30947
5104	COIL 0.22µH	4822 157 53192
5105	AM IF COIL	4822 156 20816
5106	AM IF COIL	4822 158 60511
5107 *	FERROCEPTOR	4822 526 10466
5107 ♀	FERROCEPTOR	4822 158 60602
5108 *	AM OSC COIL	4822 156 10459
5108 ♀	AM OSC COIL	4822 157 51844
5131 &	BALUN COIL	4822 157 60365
5601	COIL 36mH	4822 156 20811
5602	COIL 36mH	4822 156 20811
5605	COIL 36mH	4822 156 20811
5606	COIL 36mH	4822 156 20811

5701	OSC COIL 100kHZ	4822 156 20946

SEMICONDUCTOR

6001	TLR220 RD	4822 130 82027
6101	IN4148	4822 130 30621
6102	BB809	5322 130 31684
6103	BB809	5322 130 31684
6104	IN4148	4822 130 30621
6105	1SV149	4822 130 81673
6106	1SV149	4822 130 81673
6107	BZX79-B4V7	4822 130 34174
6131 ♀	1N4148	4822 130 30621
6132 &	1N4148	4822 130 30621
6133 @	1N4148	4822 130 30621
6300 △	KBU6DL-7002	4822 130 82289
6305 △	BZX79-C13	4822 130 34195
6306	1N4148	4822 130 30621
6307	1N4148	4822 130 30621
6312	1N4148	4822 130 30621
6313	1N4148	4822 130 30621
6314	BZX79-C6V8	4822 130 34278
6315	BZX79-C2V7	5322 130 34563
6316	1N4148	4822 130 30621
6317	1N4148	4822 130 30621
6401	BZX79C5V6	4822 130 34173
6410 &	1N4148	4822 130 30621
6411	1N4148	4822 130 30621
6412	1N4148	4822 130 30621
6413	1N4148	4822 130 30621
6415	1N4148	4822 130 30621
6420	RCR GP1U520X	4822 130 81254
6436	BZX79C5V6	4822 130 34173
6437	TLR124 RD	4822 130 31274
6438	BZX79C12V	4822 130 34197
6551	1N4148	4822 130 30621
6552	1N4148	4822 130 30621
6553	1N4148	4822 130 30621
6554	1N4148	4822 130 30621
6555	1N4148	4822 130 30621
6556	1N4148	4822 130 30621
6557	1N4148	4822 130 30621
6558	1N4148	4822 130 30621
6559	1N4148	4822 130 30621
6560	1N4148	4822 130 30621
6561	1N4148	4822 130 30621
6562	1N4148	4822 130 30621
6563	1N4148	4822 130 30621
6564	1N4148	4822 130 30621
6565	1N4148	4822 130 30621
6566	1N4148	4822 130 30621
6567	1N4148	4822 130 30621
6703	1N4148	4822 130 30621
6704	1N4148	4822 130 30621
6705	1N4148	4822 130 30621
6706	1N4148	4822 130 30621
6707	1N4148	4822 130 30621
6708	1N4148	4822 130 30621
6710	1N4148	4822 130 30621
6711	1N4148	4822 130 30621

SEMICONDUCTORS

6712		1N4148	4822 130 30621
6713		1N4148	4822 130 30621
6714		1N4148	4822 130 30621
6731		BZX79-C2V4	4822 130 31253
6732		BAV21	4822 130 30842
6801		TLG124A GN	4822 130 32472
6802		TLG124A GN	4822 130 32472
7101		2SC1047	4822 130 60163
7102		2SC1047	4822 130 60163
7103		BC548C	4822 130 44196
7104		BC548C	4822 130 44196
7105		BC558C	5322 130 60068
7106		2SC1047	4822 130 60163
7107		2SC1047	4822 130 60163
7108	*	2SC1047	4822 130 60163
7109	*	BC338-40	5322 130 44779
7110	*	BC548C	4822 130 44196
7112	*	2SC1047	4822 130 60163
7113	*	BC548C	4822 130 44196
7114		BC548C	4822 130 44196
7115		BC548C	4822 130 44196
7116		LM7000	4822 209 71331
7117		CXA1238M	4822 209 73851
7118		2SC1047	4822 130 60163
7119		BC848B	5322 130 41982
7120		BC848B	5322 130 41982
7301	Δ	BD675	5322 130 44786
7303		BC338-40	5322 130 44779
7304		BC338-40	5322 130 44779
7305		BC548C	4822 130 44196
7307	Δ	AN7161N	4822 209 73356
7308	Δ	AN7161N	4822 209 73356
7309	Δ	BD433	4822 130 42054
7313		BC548	4822 130 40938
7314		BC548	4822 130 40938
7400		TMP47C221-902-B	4822 209 62996
7401		BC338-40	5322 130 44779
7403		NMC9313BN	4822 209 60502
7411		TBC548	4822 130 40938
7413		TBC548	4822 130 40938
7420		TBC558	4822 130 40941
7421		TBC548	4822 130 40938
7435		TBC548	4822 130 40938
7436		TBC548	4822 130 40938
7437		BC338-40	5322 130 44779
7438		BC328-40	4822 130 41715
7439		TBC548	4822 130 40938
7440		BC338-40	5322 130 44779
7441		BC328-40	4822 130 41715
7442		TBC548	4822 130 40938
7443		TBC558B	4822 130 44197
7444		TBC548	4822 130 40938
7445		TBC548	4822 130 40938
7446		TBC558	4822 130 40941
7447		BC328-40	4822 130 41715
7501		NJM4560D	4822 209 83274
7503		TBC548B	4822 130 40937
7504		TBC548B	4822 130 40937
7551		NJM4560D	4822 209 83274
7551		CXA1102P	4822 209 63558
7552		BC548B	4822 130 40937
7552		NJM4560D	4822 209 83274
7553		TBC548C	4822 130 44196
7554		TBC548C	4822 130 44196
7554		BC338-40	5322 130 44779
7555		BC338-40	5322 130 44779
7556		NJM4560D	4822 209 83274
7563		BC558C	5322 130 60068
7564		BC548C	4822 130 44196
7565		BC548C	4822 130 44196
7701		TDA1602A/N3	4822 209 62372
7704		BC548B	4822 130 40937
7705		BC548B	4822 130 40937
7707		BC558B	4822 130 44197
7722		BC548C	4822 130 44196
7724		BC338-40	5322 130 44779
7801		TBC558C	5322 130 60068

♦ For -/01/21 and TS5901/17 only
& For TS5901/17 only
@ For -/01/21 only
* For -/40/45 only
æ For -/48 only
¥ For -/21 only
ø Not for -/40/45 only
Not for -/01/21 only
$ Not for TS5901/17 only

"After servicing and before returning set to customer perform a leakage current or resistive measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5 mA".